SYLVANIA Emerson®

SERVICE MANUAL

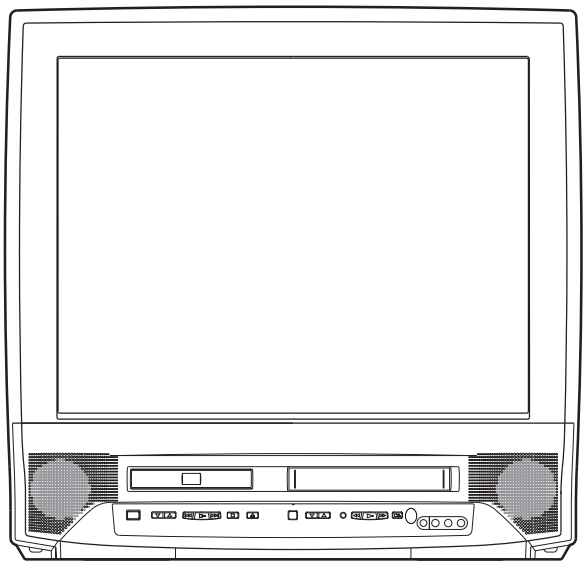
Main Section
- Specifications
- Preparation for Servicing
- Adjustment Procedures
- Schematic Diagrams
- CBA's
- Exploded Views
- Parts List

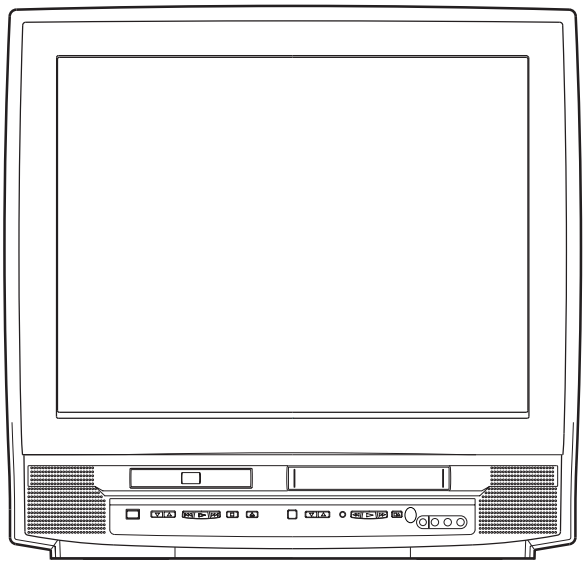
When servicing the deck mechanism, refer to MK12.5 Deck Mechanism Section.

Deck Mechanism Part No.: N2266FT

27" COLOR TV/DVD/VCR

6727DE EWC27T4





VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

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MAIN SECTION

27" COLOR TV/DVD/VCR

6727DE/EWC27T4

Sec. 1: Main Section

- **Specifications**
- **Preparation for Servicing**
- **Adjustment Procedures**
- **Schematic Diagrams**
- **CBA's**
- **Exploded views**
- **Parts List**

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SPECIFICATIONS

✳Mode---------SP mode unless otherwise specified
✳Test input terminal
<Except Tuner>----------Video input (1Vp-p)
Audio input (-10dB)
<Tuner>----------Ant. input (80dBμV) Video: 87.5%
Audio: 25kHz dev (1kHz Sin)

<DEFLECTION>

Description	Condition	Unit	Nominal	Limit
1. Over Scan	—	%	90	5
2. Linearity	Horizontal	%	—	±15
	Vertical	%	—	±10
3. High Voltage	—	kV	29	—

<VIDEO & CHROMA>

Description	Condition	Unit	Nominal	Limit
1. Misconvergence	Center	m/m	—	0.4
	Corner	m/m	—	2.5
	Side	m/m	—	1.5
2. Tint Control Range	—	deg	±30	—
3. Contrast Control Range	—	dB	6	2
4. Brightness (100% White Full Field)	Contrast: Max	ft-L	20	15
5. Color Temperature	—	K	9200	—

<DVD>

Measurement at TP

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution (TDV-540 TIT.2 CHP.16)	—	Line	350	330
2. Video S/N at CN3400 (TDV-540 TIT.2 CHP.6)	—	dB	60	55
3. S/N Chroma at CN3400 AM	—	dB	58	53
(TDV-540 TIT.2 CHP.17) PM	—	dB	58	53
4. Audio Distortion (LPCM 48 kHz, W/LPF) (PTD 1-NOR TIT.1 CHP.1)	L R	%	0.03 0.03	0.07 0.07
5. Audio freq. response (LPCM 48kHz) (PTD 1-NOR TIT.1 CHP.5 -- 10)	L, 20 Hz R, 20 Hz L, 20 kHz R, 20 kHz	dB	0	+4/-5
6. Audio S/N (LPCM 48KHz,W/LPF,A-WTD) (PTD 1-NOR TIT.1 CHP.1 -- 2)	L R	dB	85	75

<VCR>

Description	Condition	Unit	Nominal	Limit
1. Horizontal Resolution	(R/P, SP)	Line	230	200
2. Jitter (Low)	(R/P, SP)	μS	0.1	0.2
3. S/N Chroma AM(SP)	(R/P, SP)	dB	38	33
PM(SP)	(R/P, SP)	dB	38	33
4. Wow & Flutter (JIS, UNWTD)	(R/P, SP)	%	0.25	0.5

<TUNER>

Description	Condition	Unit	Nominal	Limit
1. Video S/N (80dBμV, TV4ch)	—	dB	45	40
2. Audio S/N (W/LPF)	—	dB	45	40

<NORMAL AUDIO>

All items are measured across 8Ω resistor at speaker output terminal.

Description	Condition	Unit	Nominal	Limit
1. Audio Output Power	(R/P, SP)	W	1.0	0.8
2. Audio S/N (W/LPF)	(R/P, SP)	dB	40	36
3. Audio distortion (W/LPF,-10dB 1kHz IN)	(R/P, SP)	%	3.0	5.0
4. Audio Freq. Response (-10dB 1kHz IN) 200 Hz	(R/P, SP)	dB	-2.0	-2.0±5.0
8 kHz	(R/P, SP)	dB	0	0±6.0

<Hi-Fi AUDIO>

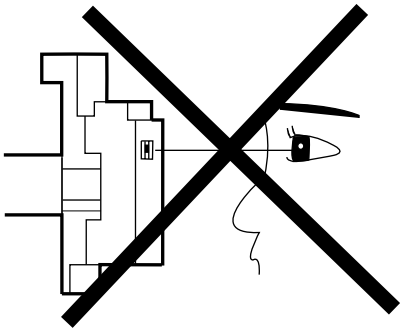
* All items are measured at TP1701 and TP1702.

Description	Condition	Unit	Nominal	Limit
1. Output Level (-10dB 1kHz IN)	(R/P, SP)	dB	-8.0	-8±4
2. Audio Distortion (-10dB 1kHz IN)	(R/P, SP)	%	0.5	1.0
3. Freq. Response (-15dB 1kHz IN) 20 Hz	(R/P, SP)	dB	0	±4
20 kHz	(R/P, SP)	dB	0	±4

Note: Nominal specifications represent the design specifications. All units should be able to approximate these. Some will exceed and some may drop slightly below these specifications. Limit specifications represent the absolute worst condition that still might be considered acceptable. In no case should a unit fail to meet limit specifications.

LASER BEAM SAFETY PRECAUTIONS

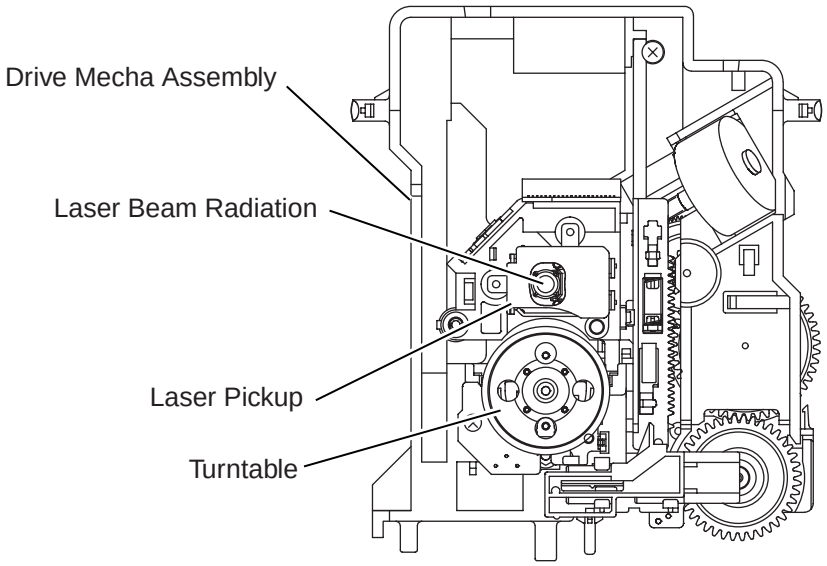
This DVD player uses a pickup that emits a laser beam.



Do not look directly at the laser beam coming from the pickup or allow it to strike against your skin.

The laser beam is emitted from the location shown in the figure. When checking the laser diode, be sure to keep your eyes at least 30cm away from the pickup lens when the diode is turned on. Do not look directly at the laser beam.

Caution: Use of controls and adjustments, or doing procedures other than those specified herein, may result in hazardous radiation exposure.



CAUTION
LASER RADIATION
WHEN OPEN. DO NOT
STARE INTO BEAM.

Location: Top of DVD mechanism.

IMPORTANT SAFETY PRECAUTIONS

Prior to shipment from the factory, our products are strictly inspected for recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Safety Precautions for TV Circuit

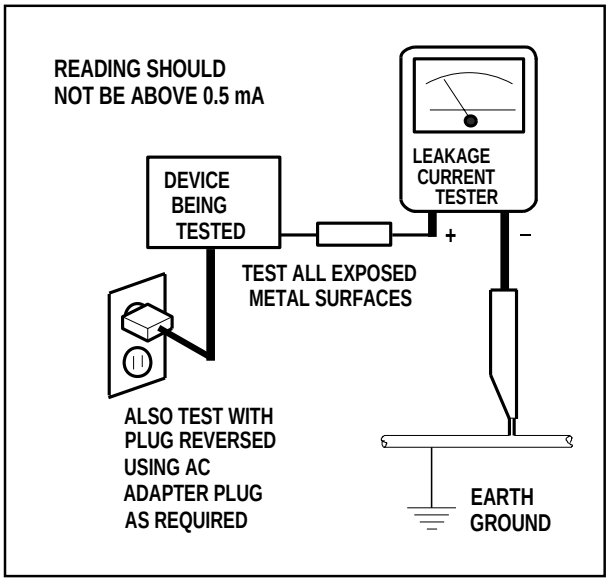
1. **Before returning an instrument to the customer,** always make a safety check of the entire instrument, including, but not limited to, the following items:

a. Be sure that no built-in protective devices are defective and have been defeated during servicing. (1) Protective shields are provided on this chassis to protect both the technician and the customer. Correctly replace all missing protective shields, including any removed for servicing convenience. (2) When reinstalling the chassis and/or other assembly in the cabinet, be sure to put back in place all protective devices, including but not limited to, nonmetallic control knobs, insulating fishpapers, adjustment and compartment covers/shields, and isolation resistor/capacitor networks. **Do not operate this instrument or permit it to be operated without all protective devices correctly installed and functioning. Servicers who defeat safety features or fail to perform safety checks may be liable for any resulting damage.**

b. Be sure that there are no cabinet openings through which an adult or child might be able to insert their fingers and contact a hazardous voltage. Such openings include, but are not limited to, (1) spacing between the picture tube and the cabinet mask, (2) excessively wide cabinet ventilation slots, and (3) an improperly fitted and/or incorrectly secured cabinet back cover.

c. Antenna Cold Check - With the instrument AC plug removed from any AC source, connect an electrical jumper across the two AC plug prongs. Place the instrument AC switch in the on position. Connect one lead of an ohmmeter to the AC plug prongs tied together and touch the other ohmmeter lead in turn to each tuner antenna input exposed terminal screw and, if applicable, to the coaxial connector. If the measured resistance is less than 1.0 megohm or greater than 5.2 megohm, an abnormality exists that must be corrected before the instrument is returned to the customer. Repeat this test with the instrument AC switch in the off position.

d. Leakage Current Hot Check - With the instrument completely reassembled, plug the AC line cord directly into a 120V AC outlet. (Do not use an isolation transformer during this test.) Use a leakage current tester or a metering system that complies with American National Standards Institute (ANSI) C101.1 Leakage Current for Appliances and Underwriters Laboratories (UL) 1410, (50.7). With the instrument AC switch first in the on position and then in the off position, measure from a known earth ground (metal water pipe, conduit, etc.) to all exposed metal parts of the instrument (antennas, handle brackets, metal cabinet, screw heads, metallic overlays, control shafts, etc.), especially any exposed metal parts that offer an electrical return path to the chassis. Any current measured must not exceed 0.5 milli-ampere. Reverse the instrument power cord plug in the outlet and repeat the test.



ANY MEASUREMENTS NOT WITHIN THE LIMITS SPECIFIED HEREIN INDICATE A POTENTIAL SHOCK HAZARD THAT MUST BE ELIMINATED BEFORE RETURNING THE INSTRUMENT TO THE CUSTOMER OR BEFORE CONNECTING THE ANTENNA OR ACCESSORIES.

e. X-Radiation and High Voltage Limits - Because the picture tube is the primary potential source of X-radiation in solid-state TV receivers, it is specially constructed to prohibit X-radiation emissions. For continued X-radiation protection, the replacement picture tube must be the same type as the original. Also, because the picture tube shields and mounting hardware perform an X-radiation protection function, they must be correctly in place. High voltage must be measured each time servic-

ing is performed that involves B+, horizontal deflection or high voltage. Correct operation of the X-radiation protection circuits also must be reconfirmed each time they are serviced. (X-radiation protection circuits also may be called "horizontal disable" or "hold down.") Read and apply the high voltage limits and, if the chassis is so equipped, the X-radiation protection circuit specifications given on instrument labels and in the Product Safety & X-Radiation Warning note on the service data chassis schematic. High voltage is maintained within specified limits by close tolerance safety-related components/adjustments in the high-voltage circuit. If high voltage exceeds specified limits, check each component specified on the chassis schematic and take corrective action.

2. Read and comply with all caution and safety-related notes on or inside the receiver cabinet, on the receiver chassis, or on the picture tube.

3. Design Alteration Warning - Do not alter or add to the mechanical or electrical design of this TV receiver. Design alterations and additions, including, but not limited to circuit modifications and the addition of items such as auxiliary audio and/or video output connections, might alter the safety characteristics of this receiver and create a hazard to the user. Any design alterations or additions will void the manufacturer's warranty and may make you, the servicer, responsible for personal injury or property damage resulting therefrom.

4. Picture Tube Implosion Protection Warning - The picture tube in this receiver employs integral implosion protection. For continued implosion protection, replace the picture tube only with one of the same type number. Do not remove, install, or otherwise handle the picture tube in any manner without first putting on shatterproof goggles equipped with side shields. People not so equipped must be kept safely away while picture tubes are handled. Keep the picture tube away from your body. Do not handle the picture tube by its neck. Some "in-line" picture tubes are equipped with a permanently attached deflection yoke; because of potential hazard, do not try to remove such "permanently attached" yokes from the picture tube.

5. Hot Chassis Warning -

a. Some TV receiver chassis are electrically connected directly to one conductor of the AC power cord and may be safety-serviced without an isolation transformer only if the AC power plug is inserted so that the chassis is connected to the ground side of the AC power source. To confirm that the AC power plug is inserted correctly, with an AC voltmeter, measure between the chassis and a known earth ground. If a voltage reading in excess of 1.0V is obtained, remove and reinsert the AC power plug in the opposite polarity and again measure the voltage potential between the chassis and a known earth ground.

b. Some TV receiver chassis normally have 85V AC(RMS) between chassis and earth ground regardless of the AC plug polarity. This chassis can be safety-serviced only with an isolation transformer inserted in the power line between the receiver and the AC power source, for both personnel and test equipment protection.

c. Some TV receiver chassis have a secondary ground system in addition to the main chassis ground. This secondary ground system is not isolated from the AC power line. The two ground systems are electrically separated by insulation material that must not be defeated or altered.

6. Observe original lead dress. Take extra care to assure correct lead dress in the following areas: a. near sharp edges, b. near thermally hot parts be sure that leads and components do not touch thermally hot parts, c. the AC supply, d. high voltage, and e. antenna wiring. Always inspect in all areas for pinched, out of place, or frayed wiring. Check AC power cord for damage.

7. Components, parts, and/or wiring that appear to have overheated or are otherwise damaged should be replaced with components, parts, or wiring that meet original specifications. Additionally, determine the cause of overheating and/or damage and, if necessary, take corrective action to remove any potential safety hazard.

8. Product Safety Notice - Some electrical and mechanical parts have special safety-related characteristics which are often not evident from visual inspection, nor can the protection they give necessarily be obtained by replacing them with components rated for higher voltage, wattage, etc.. Parts that have special safety characteristics are identified by a (⚠) on schematics and in parts lists. Use of a substitute replacement that does not have the same safety characteristics as the recommended replacement part might create shock, fire, and/or other hazards. The Product's Safety is under review continuously and new instructions are issued whenever appropriate. Prior to shipment from the factory, our products are strictly inspected to confirm with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

Precautions during Servicing

A. Parts identified by the (⚠) symbol are critical for safety.

Replace only with part number specified.

B. In addition to safety, other parts and assemblies are specified for conformance with regulations applying to spurious radiation. These must also be replaced only with specified replacements.

Examples: RF converters, RF cables, noise blocking capacitors, and noise blocking filters, etc.

C. Use specified internal wiring. Note especially:

1) Wires covered with PVC tubing
2) Double insulated wires
3) High voltage leads

D. Use specified insulating materials for hazardous live parts. Note especially:

1) Insulation Tape
2) PVC tubing
3) Spacers
4) Insulators for transistors.

E. When replacing AC primary side components (transformers, power cord, etc.), wrap ends of wires securely about the terminals before soldering.

F. Observe that the wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

G. Check that replaced wires do not contact sharp edged or pointed parts.

H. When a power cord has been replaced, check that 5~6 kg of force in any direction will not loosen it.

I. Also check areas surrounding repaired locations.

J. Be careful that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

K. Crimp type wire connector

When replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, in order to prevent shock hazards, perform carefully and precisely the following steps.

Replacement procedure

1) Remove the old connector by cutting the wires at a point close to the connector.

   Important: Do not re-use a connector (discard it).

2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.
3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.
4) Use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

L. When connecting or disconnecting the TV/DVD connectors, first, disconnect the AC plug from AC supply socket.

Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Clearance Distance

When replacing primary circuit components, confirm specified clearance distance (d) and (d') between soldered terminals, and between terminals and surrounding metallic parts. (See Fig. 1)

Table 1: Ratings for selected area

AC Line Voltage	Region	Clearance Distance (d), (d')
110 to 130 V	USA or CANADA	≥ 3.2 mm (0.126 inches)

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

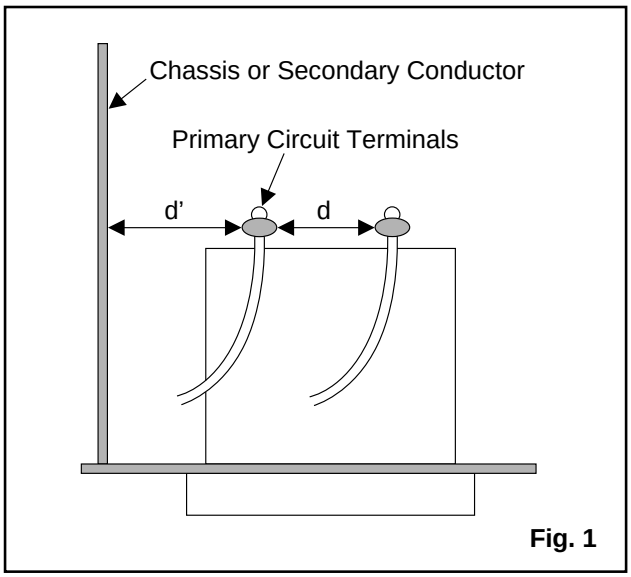


Fig. 1

2. Leakage Current Test

Confirm the specified (or lower) leakage current between B (earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B (earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See Fig. 2 and following table.

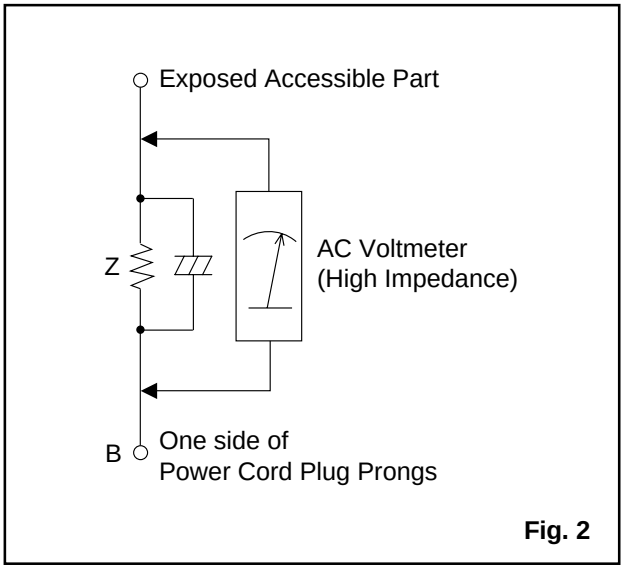


Fig. 2

Table 2: Leakage current ratings for selected areas

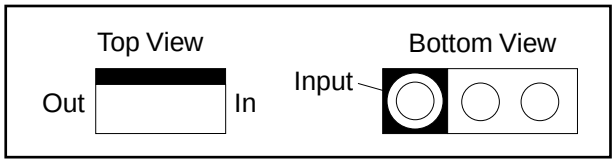
AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
110 to 130 V	USA or CANADA	0.15μF CAP. & 1.5kΩ RES. connected in parallel	i≤0.5mA rms	Exposed accessible parts

Note: This table is unofficial and for reference only. Be sure to confirm the precise values.

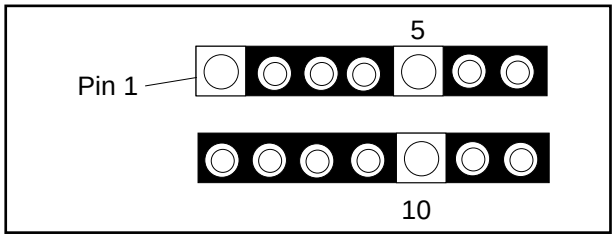
STANDARD NOTES FOR SERVICING

Circuit Board Indications

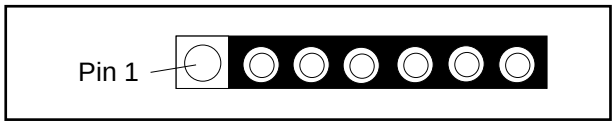
1. The output pin of the 3 pin Regulator ICs is indicated as shown:



2. For other ICs, pin 1 and every 5th pin is indicated as shown:

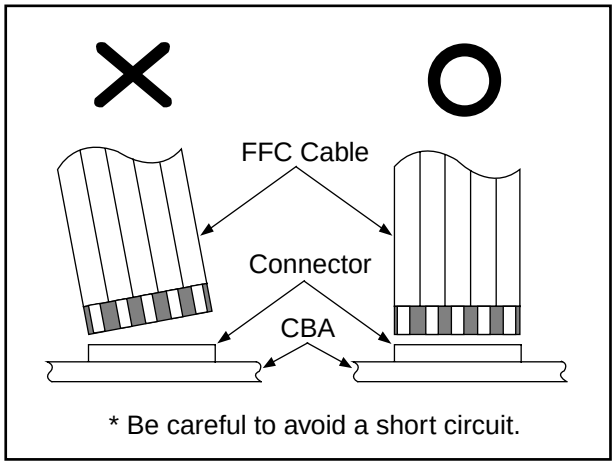


3. The 1st pin of every pin connector are indicated as shown:



Instructions for Connectors

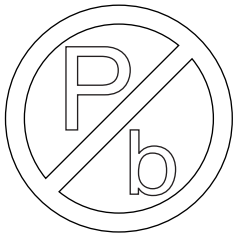
1. When you connect or disconnect FFC cable (connector), be sure to disconnect the AC cord.
2. FFC cable (connector) should be inserted parallel into the connector, not at an angle.



[CBA= Circuit Board Assembly]

Pb (Lead) Free Solder

Pb free mark will be found on PCBs which use Pb free solder. (Refer to figure.) For PCBs with Pb free mark, be sure to use Pb free solder. For PCBs without Pb free mark, use standard solder.



Pb free mark

How to Remove / Install Flat Pack IC

Caution:

1. The Flat Pack-IC shape may differ by models. Use an appropriate hot-air flat pack-IC desoldering machine, whose shape matches that of the Flat Pack-IC.
2. Do not apply the hot air to the chip parts around the Flat Pack-IC for over 6 seconds as damage may occur to the chip parts. Put Masking Tape around the Flat Pack-IC to protect other parts from damage. (Fig. S-1-2)
3. The Flat Pack-IC on the CBA is affixed with glue, so be careful not to break or damage the foil of each pin or solder lands under the IC when removing it.

1. Removal

With Hot - Air Flat Pack - IC Desoldering Machine:

a. Prepare the Hot - Air Flat Pack - IC Desoldering Machine, then apply hot air to Flat Pack - IC (about 5~6 seconds). (Fig. S-1-1)

b. Remove the Flat Pack- IC with tweezers while applying the hot air.

With Soldering Iron:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Lift each lead of the Flat Pack - IC upward one by one, using a sharp pin or wire to which solder will not adhere (iron wire). When heating the pins, use a fine tip soldering iron or a hot air Desoldering Machine. (Fig. S-1-4)

With Iron Wire:

a. Using desoldering braid, remove the solder from all pins of the Flat Pack - IC. When you use solder flux which is applied to all pins of the Flat Pack - IC, you can remove it easily. (Fig. S-1-3)

b. Affix the wire to a workbench or solid mounting point, as shown in Fig. S-1-5.

c. Pull up on the wire as the solder melts so as to lift the IC leads from the CBA contact pads, while heating the pins using a fine tip soldering iron or hot air blower.

Note:

When using a soldering iron, care must be taken to ensure that the Flat Pack - IC is not being held by glue, or when it is removed from the CBA, it may be damaged if force is used.

2. Installation

a. Using desoldering braid, remove the solder from the foil of each pin of the Flat Pack - IC on the CBA, so you can install a replacement Flat Pack - IC more easily.

b. The "●" mark on the Flat Pack - IC indicates pin 1 (See Fig. S-1-6). Make sure this mark matches the 1 on the CBA when positioning for installation. Then pre - solder the four corners of the Flat Pack-IC (See Fig. S-1-7).

c. Solder all pins of the Flat Pack - IC. Make sure that none of the pins have solder bridges.

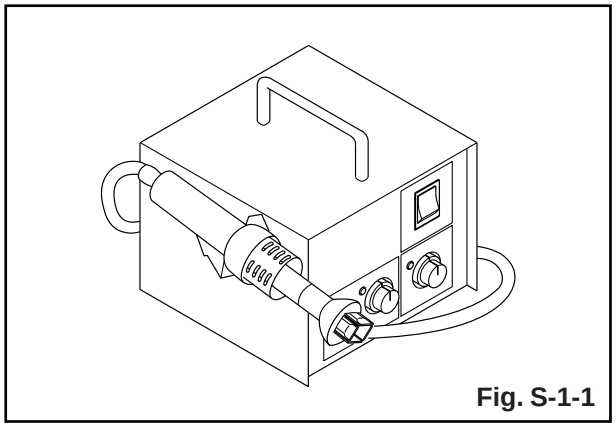


Fig. S-1-1

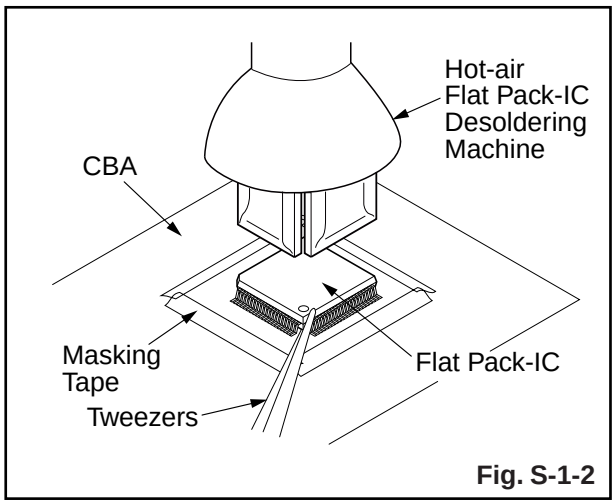


Fig. S-1-2

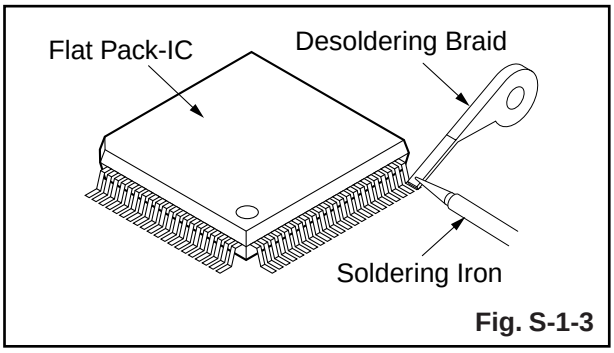


Fig. S-1-3

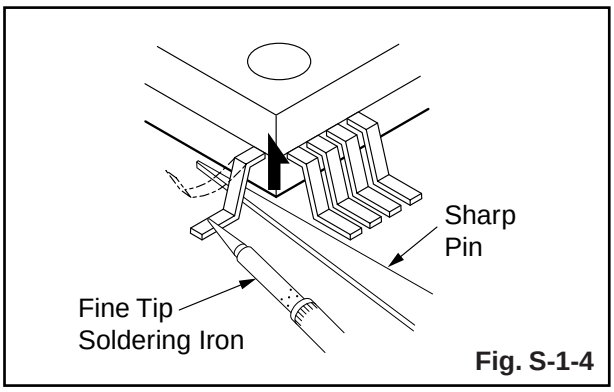


Fig. S-1-4

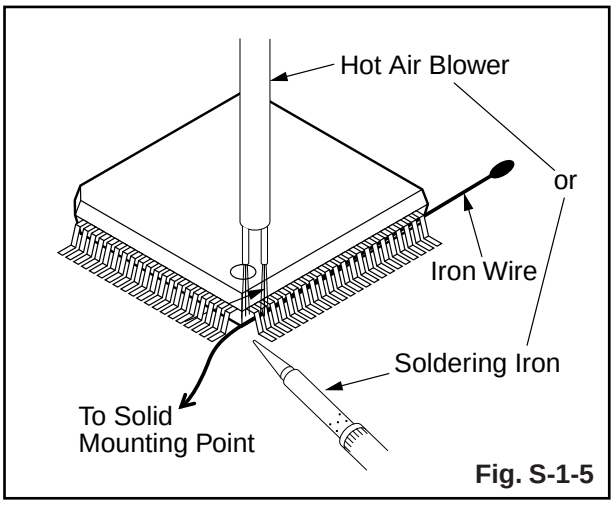
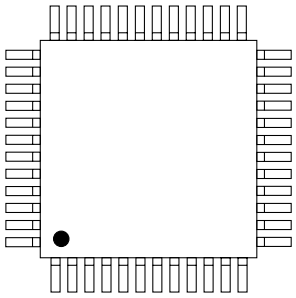


Fig. S-1-5

Example :



Pin 1 of the Flat Pack-IC
is indicated by a " ● " mark.

Fig. S-1-6

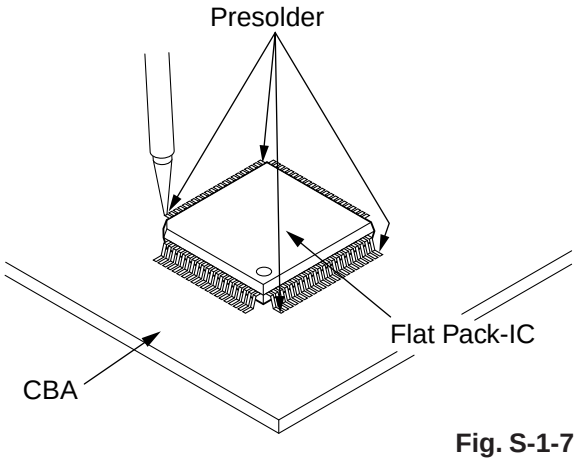


Fig. S-1-7

Instructions for Handling Semiconductors

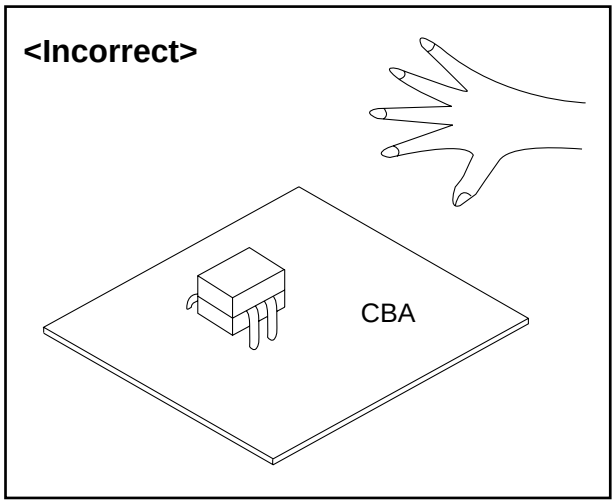
Electrostatic breakdown of the semiconductors may occur due to a potential difference caused by electrostatic charge during unpacking or repair work.

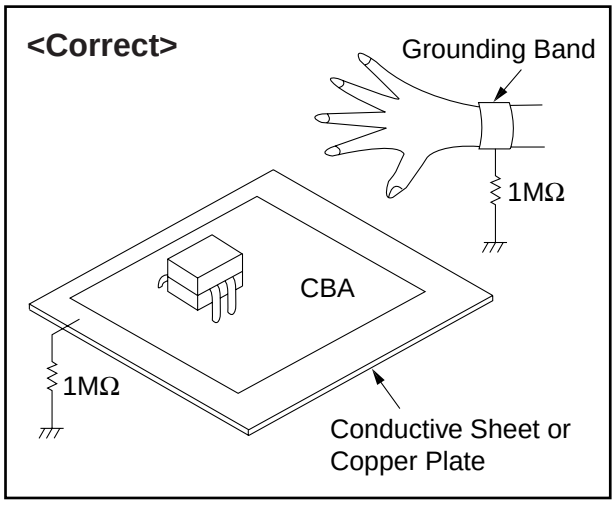
Ground for Human Body

Be sure to wear a grounding band (1MΩ) that is properly grounded to remove any static electricity that may be charged on the body.

Ground for Work Bench

Be sure to place a conductive sheet or copper plate with proper grounding (1MΩ) on the work bench or other surface, where the semiconductors are to be placed. Because the static electricity charge on the clothing will not escape through the body grounding band, be careful to avoid contacting semiconductors to clothing.





PREPARATION FOR SERVICING

How to Enter the Service Mode

Caution: 1

1. Optical sensors system are used for Tape Start and End Sensor on this equipment. Read this page carefully and prepare as described on this page before starting to service; otherwise, the unit may operate unexpectedly.

Preparing: 1

1. Cover Q202 (START SENSOR) and Q201 (END SENSOR) with Insulation Tape or enter the service mode to activate Sensor Inhibition automatically.

Note: Avoid playing, rewinding or fast forwarding the tape to its beginning or end, because both Tape End Sensors are not active.

How to Enter the Service Mode

1. Turn power on.
2. Use service remote control unit and press "DISC MENU" key. (See page 1-7-1.)
3. When entering the service mode, one of the number (1, 2 or 4) will display at corners of the screen.
4. During the service mode, electrical adjustment mode can be selected by remote control key. (Service remote control unit).

   Details are as follows.

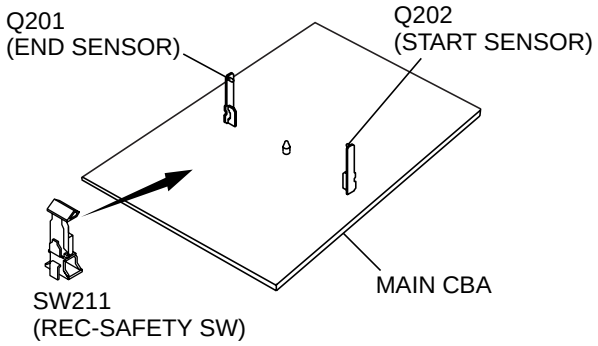
Key	Adjustment Mode
PICTURE	Picture adjustment mode: Press the "PICTURE" button to change from BRT (Bright), *CNT (Contrast), *COL (Color), *TNT(Tint) and *V-TNT(V-Tint). Press "CH ▲/▼" key to display Initial Value. *Marked items are not necessary to adjust normally.
0	Y DL Time TV/Y DL Time EXT/Y SW LPF/Black Stretch Off/ Black Stretch CONT/C. Angle adjustment mode: See adjustment instructions page 1-7-3.
1	No need to use.
2	H fo adjustment mode: See adjustment instructions page 1-7-5.
3	No need to use.
4	Auto record mode: Perform recording (15 Sec.)-->Stop-->Rewind (Zero return) automatically.
5	Head switching position adjustment mode: See adjustment instructions page 1-7-8.
6	No need to use.
7	Purity check mode: Shows Red, Green, Blue or White cyclically on the screen each time the "7" key is pressed.
8	H. Position Adjustment: See adjustment instructions page 1-7-7.
9	V.size/V. shift adjustment: See adjustment instructions page 1-7-7.
VOL ▲	CD-VOL/DVD-BRT/DVD-SHARP Adjustment mode: See adjustment instructions page 1-7-4.
VOL ▼	Cut-off Adjustment mode: See adjustment instructions page 1-7-5. White balance Adjustment mode: See adjustment instructions page 1-7-6.

Caution: 2

1. The deck mechanism assembly is mounted on the Main CBA directly, and SW211 (REC-SAFETY SW) is mounted on the Main CBA. When deck mechanism assembly is removed from the Main CBA due to servicing, this switch can not be operated automatically.

Preparing: 2

1. To eject the tape, press the "STOP/EJECT" button on the unit (or Remote Control).
2. When you want to record during the Service mode, press the "Rec" button while depressing SW211 (REC-SAFETY SW) on the Main CBA.



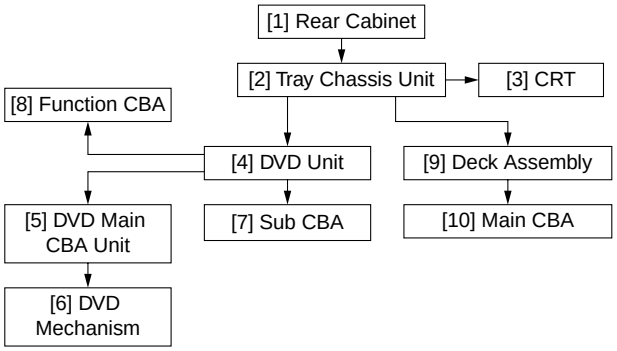
CABINET DISASSEMBLY INSTRUCTIONS

1. Disassembly Flowchart

This flowchart indicates the disassembly steps for the cabinet parts, and the CBA in order to gain access to item(s) to be serviced. When reassembling, follow the steps in reverse order. Bend, route and dress the cables as they were.

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.



2. Disassembly Method

ID/ LOC. No.	PART	REMOVAL		
		Fig. No.	REMOVE/ *UNHOOK/UNLOCK/ RELEASE/UNPLUG/ DESOLDER	Note
[1]	Rear Cabinet	1	7(S-1), (S-2), 2(S-3)	-
[2]	Tray Chassis Unit	2, 3, 5	Anode Cap, *CN501A, CRT CBA, *CN571, *CN601, *CN802, *CN1801	1
[3]	CRT	3, 5	4(S-4), *CL501A	-
[4]	DVD Unit	2, 5	4(S-5), *CN1601, *CN1602	-
[5]	DVD Main CBA Unit	2, 4, 5	(S-6), (S-7), 2(S-8), 2(S-9), *CN201, *CN301, Loader Shield Top	2 2-1 2-2 2-3 2-4 3
[6]	DVD Mechanism	2, 4, 5	(S-10), Loader Shield Bottom	2
[7]	Sub CBA	2, 5	6(S-11), *CN301, *CN602	-
[8]	Function CBA	2, 5	2(S-12), *CN803	-
[9]	Deck Assembly	2, 5	3(S-13), 7(S-14), (S-15), (S-16), Top Shield, *CL201, *CL401, *CL402, *CL403	4
[10]	Main CBA	2	5(S-17)	-
		↓ (1)	↓ (2)	↓ (3) ↓ (4) ↓ (5)

(1): Order of steps in Procedure. When reassembling, follow the steps in reverse order.These numbers are also used as the Identification (location) No. of parts in Figures.

(2): Parts to be removed or installed.

(3): Fig. No. showing Procedure of Part Location.

(4): Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
S=Screw, P=Spring, L=Locking Tab, CN=Connector, *=Unhook, Unlock, Release, Unplug, or Desolder
2(S-2) = two Screws (S-2)

(5): Refer to the following "Reference Notes in the Table."

Reference Notes in the Table

Caution !

When removing the CRT, be sure to discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

Reference Notes in the Table

CAUTION 1: Discharge the Anode Lead of the CRT with the CRT Ground Wire before removing the Anode Cap.

1. Disconnect the following: Anode Cap, CN501A, CRT CBA, CN571, CN601, CN802, and CN1801. Then remove Tray Chassis Unit.

CAUTION 2: Electrostatic breakdown of the laser diode in the optical system block may occur as a potential difference caused by electrostatic charge accumulated on cloth, human body etc., during unpacking or repair work.

To avoid damage of pickup follow next procedures.

2-1. Remove screws (S-6), (S-7) and 2(S-8), and remove Loader Shield Top.

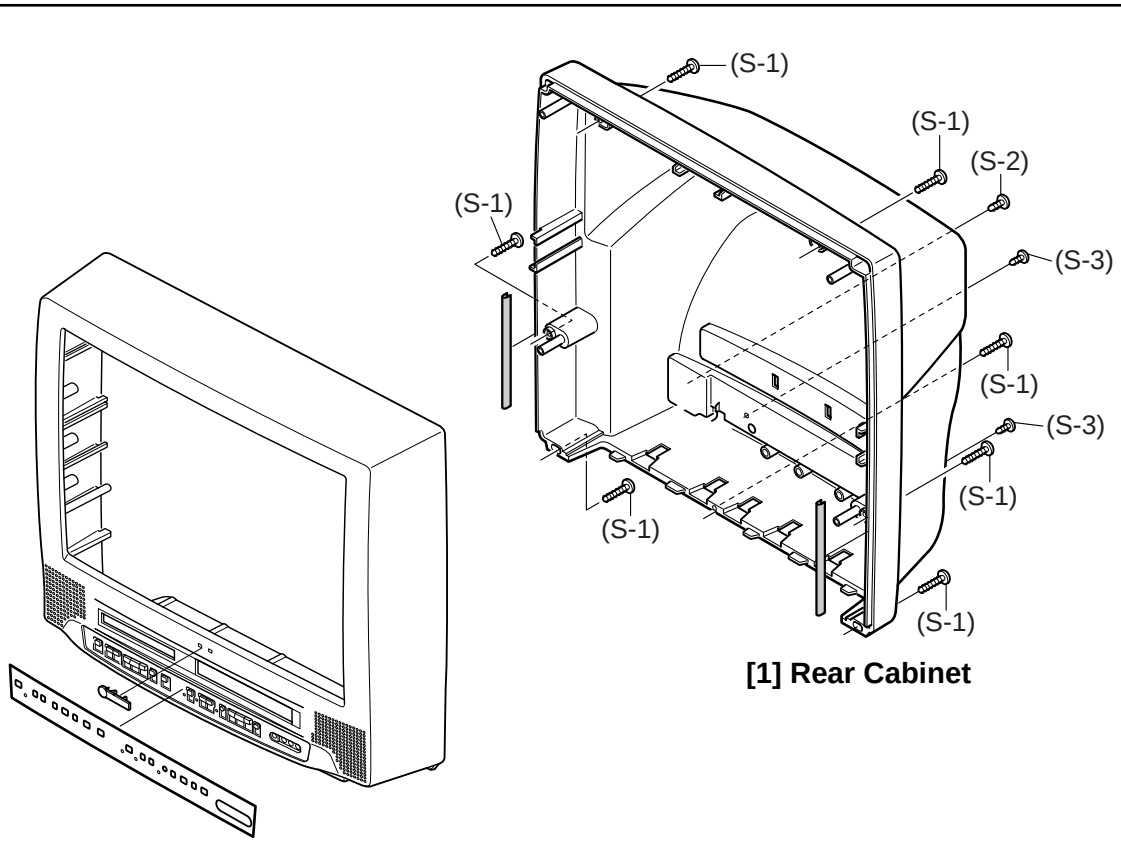
2-2. Disconnect Connector (CN301) on the DVD Main CBA Unit.

2-3. Short the three short lands of FPC cable with solder before removing the FFC cable (CN201) from it. If you disconnect the FFC cable (CN201), the laser diode of pickup will be destroyed. (Fig. 4)

2-4. Remove two screws (S-9) and remove DVD Main CBA Unit.

CAUTION 3: When reassembling, confirm the FFC cable (CN201) is connected completely. Then remove the solder from the three short lands of FPC cable. (Fig. 4)

4. Remove three screws (S-13) and remove Top Shield. Remove screws 7(S-14), (S-15) and (S-16). Then, desolder connectors (CL201, CL401, CL402, CL403) and lift up the Deck Assembly.



[1] Rear Cabinet

Fig. 1

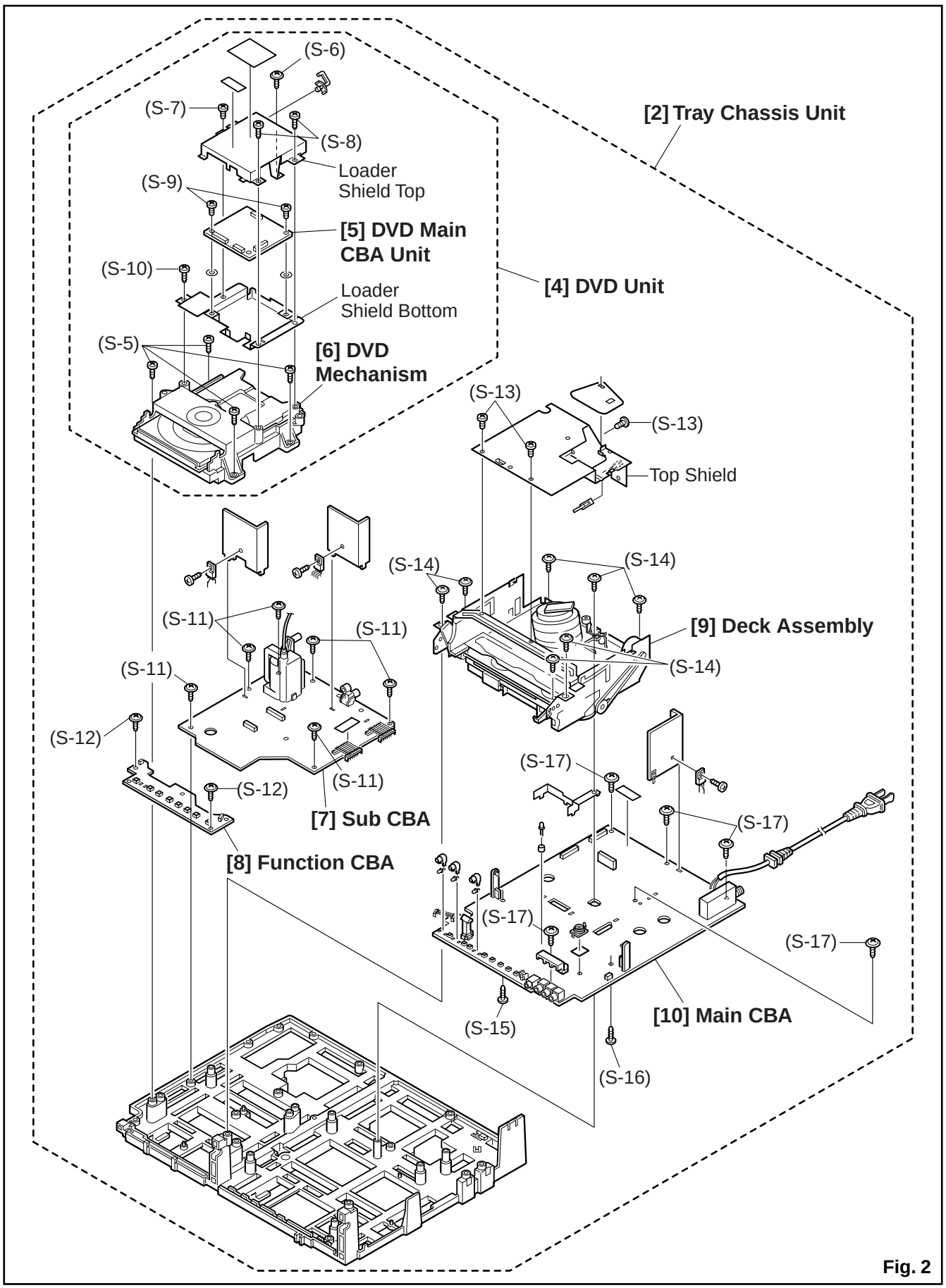

(S-6)
(S-7)
(S-8)
Loader
Shield Top
(S-9)
[5] DVD Main
CBA Unit
(S-10)
Loader
Shield Bottom
(S-5)
[6] DVD
Mechanism
[4] DVD Unit
[2] Tray Chassis Unit
(S-13)
(S-13)
Top Shield
(S-14)
(S-14)
[9] Deck Assembly
(S-14)
(S-11)
(S-11)
(S-11)
(S-12)
(S-12)
(S-11)
[7] Sub CBA
[8] Function CBA
(S-17)
(S-17)
(S-17)
(S-17)
(S-15)
[10] Main CBA
(S-16)

Fig. 2

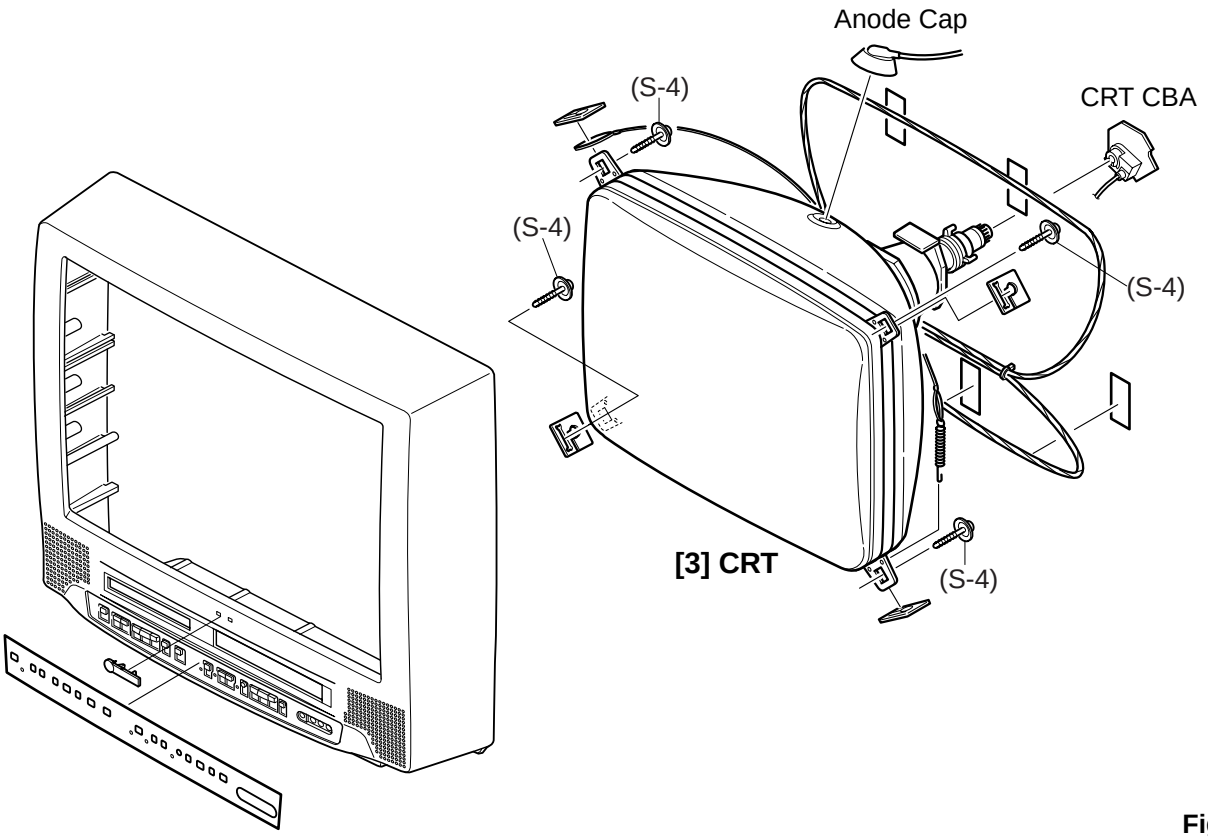
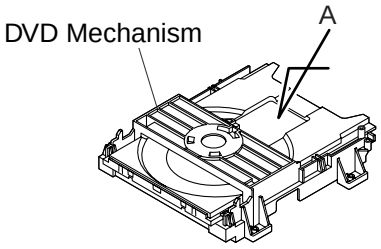

Anode Cap
(S-4)
CRT CBA
(S-4)
(S-4)
[3] CRT
(S-4)

Fig. 3


DVD Mechanism
A

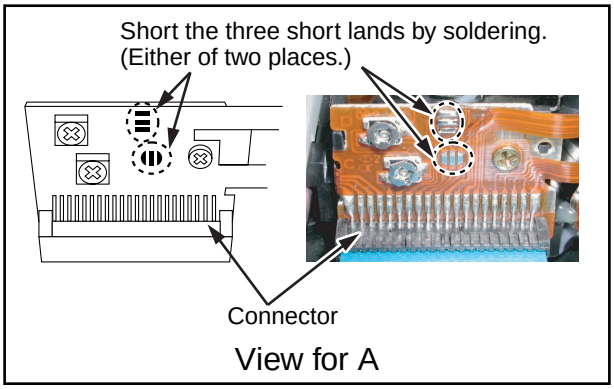

Short the three short lands by soldering.
(Either of two places.)
Connector
View for A

Fig. 4

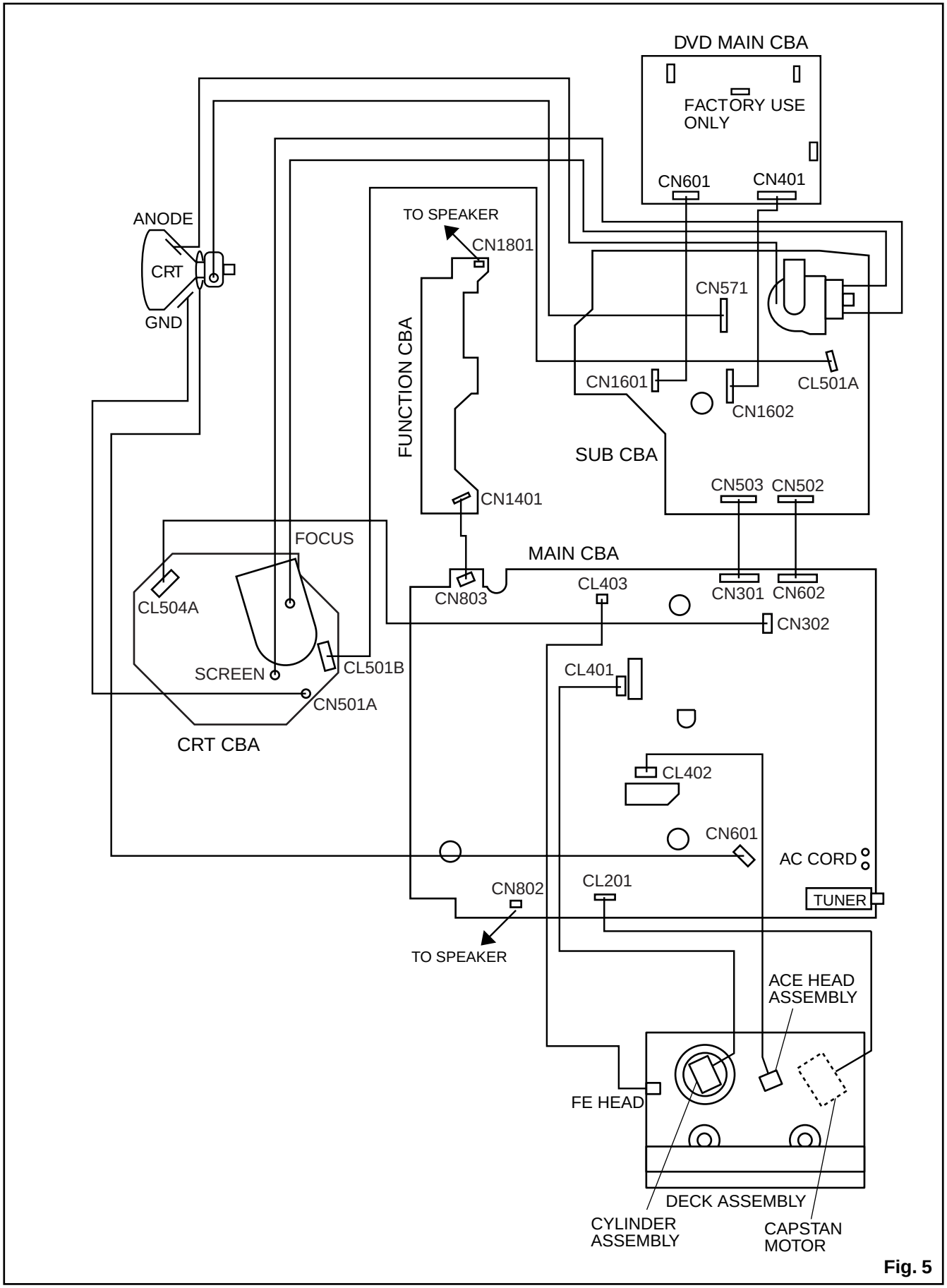

DVD MAIN CBA
FACTORY USE ONLY
CN601
CN401
ANODE
CRT
GND
TO SPEAKER
CN1801
FUNCTION CBA
CN571
CN1601
CN1602
CL501A
SUB CBA
CN503
CN502
CN1401
FOCUS
MAIN CBA
CL504A
CN803
CL403
CN301
CN602
CN302
SCREEN
CL501B
CN501A
CRT CBA
CL401
CL402
CN601
AC CORD
CN802
CL201
TUNER
TO SPEAKER
ACE HEAD ASSEMBLY
FE HEAD
DECK ASSEMBLY
CYLINDER ASSEMBLY
CAPSTAN MOTOR

Fig. 5

ELECTRICAL ADJUSTMENT INSTRUCTIONS

General Note:

"CBA" is abbreviation for "Circuit Board Assembly."

NOTE:

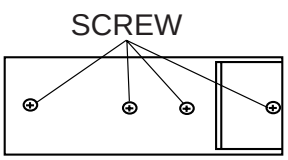
Electrical adjustments are required after replacing circuit components and certain mechanical parts.
It is important to perform these adjustments only after all repairs and replacements have been completed.
Also, do not attempt these adjustments unless the proper equipment is available.

Test Equipment Required

1. NTSC Pattern Generator (Color Bar W/White Window, Red Color, Dot Pattern, Gray Scale, Monoscope, Multi-Burst)
2. AC Milli Voltmeter (RMS)
3. Alignment Tape (FL8A, FL8N), Blank Tape
4. DC Voltmeter
5. Oscilloscope: Dual-trace with 10:1 probe,
   V-Range: 0.001~50V/Div,
   F-Range: DC~AC-60MHz
6. Frequency Counter
7. Plastic Tip Driver
8. Color Analyzer

How to make service remote control unit:

1. Prepare normal remote control unit
   (Part No. NE222UD --- **[6727DE]**)
   (Part No. NE223UD --- **[EWC27T4]**)
   Remove 4 screws from the back lid (Fig. 1-1).



Remote control unit (Bottom) **Fig. 1-1**

2. Cut off pin 10 of the remote control microprocessor and short circuit pins 10 and 17 of the microprocessor with a jumper wire

How to Set up the Service mode:

Service mode:

1. Use the service remote control unit.
2. Turn the power on. (Use main power on the TV unit.)
3. To enter the TV mode, press "CH ▲ / ▼" button on the TV unit.
4. Press "DISC MENU" button on the service remote control unit. Version of micro computer will display on the CRT. (Ex: 057-001)

X-Ray Protection Test

X-Ray protection test should be done when replacing any parts of this chassis.

1. Short both ends of R592 (on Sub CBA).
2. Confirm that the main power turns off.
3. If the main power does not turn off, then replace the following parts (D591, Q591, R592, R593, R594 and IC201).
4. Perform steps 1 to 3 again.

1. DC 120V (+B) Adjustment

Purpose: To obtain correct operation.

Symptom of Misadjustment: The picture is dark and unit does not operate correctly.

Test point	Adj. Point	Mode	Input
D613 Cathode (+B), HEAT SINK (GND)	VR601	---	-----
Tape	**M. EQ.**	**Spec.**	
---	DC Voltmeter	+120±1.0V DC	

Note: D613 Cathode (+B), HEAT SINK, VR601 --- Main CBA

1. Connect the unit to AC Power Outlet.
2. Connect DC Volt Meter to D613 Cathode (+B) and HEAT SINK (GND).
3. Adjust VR601 so that the voltage of D613 Cathode (+B) becomes +120±1.0V DC.

2. Setting for CONTRAST, COLOR, TINT and V-TINT Data Values

General

1. Enter the Service mode. (See page 1-7-1.)
2. Press "PICTURE" button on the service remote control unit. Display changes "BRT," "CNT," "COL," "TNT," and "V-TNT" cyclically when "PICTURE" button is pressed.

CONTRAST (CNT)

1. Press "PICTURE" button on the service remote control unit. Then select "CONTRAST (CNT)" display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "CONTRAST (CNT)" becomes 90.

COLOR (COL)

1. Press "PICTURE" button on the service remote control unit. Then select "COLOR (COL)" display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "COLOR (COL)" becomes 58.

TINT (TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "TINT (TNT)" display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "TINT (TNT)" becomes 57.

V-TINT (V-TNT)

1. Press "PICTURE" button on the service remote control unit. Then select "V-TINT (V-TNT)" display.
2. Press "CH ▲ / ▼" buttons on the service remote control unit so that the value of "V-TINT (V-TNT)" becomes 56.

Note: BRIGHT data value does not need to be adjusted at this moment.

3. Setting for Y DL Time TV, Y DL Time EXT, Y SW LPF, Black Stretch Off, Black Stretch CONT and C. Angle Data Values

1. Enter the Service mode. (See page 1-7-1.)
2. **Y DL Time TV Adjustment:** Press "0" button on the service remote control unit twice to show "D-T TV" on the display.
   Y DL Time EXT Adjustment: Press "0" button on the service remote control unit three times to show "D-T EXT" on the display.
   Y SW LPF Adjustment: Press "0" button on the service remote control unit four times to show "Y SW" on the display.
   Black Stretch Off Adjustment: Press "0" button on the service remote control unit five times to show "B-S" on the display.
   Black Stretch CONT Adjustment: Press "0" button on the service remote control unit six times to show "BS2" on the display.
   C. Angle Adjustment: Press "0" button on the service remote control unit seven times to show "C-ANG" on the display.
3. **Y DL Time TV Adjustment:** Select "2" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Y DL Time EXT Adjustment: Select "2" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Y SW LPF Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Black Stretch Off Adjustment: Select "OFF" by pressing "CH ▲ / ▼" buttons on the service remote control.
   Black Stretch CONT Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control.
   C. Angle Adjustment: Select "103" by pressing "CH ▲ / ▼" buttons on the service remote control.

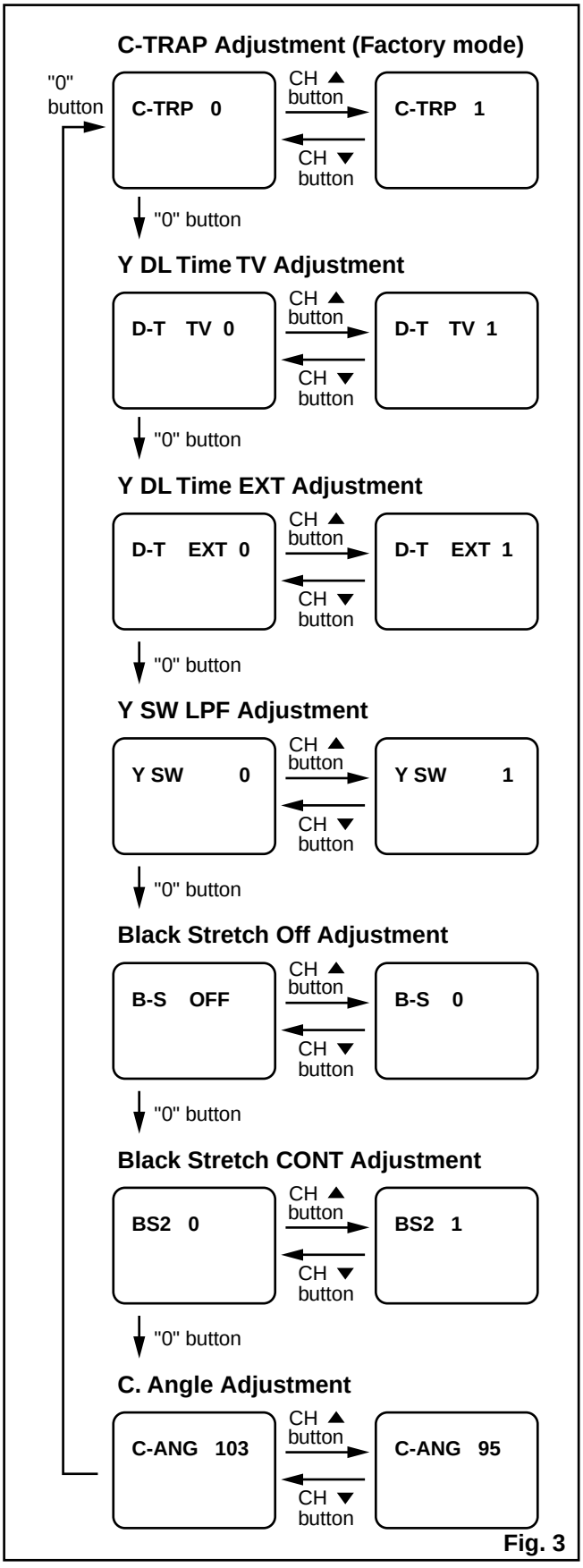


Fig. 3

4. Setting for CD-VOL, DVD-BRT and DVD-SHARP Data Values

1. Enter the Service mode. (See page 1-7-1.)
2. **CD-VOL Adjustment:** Press "VOL ▲" button on the service remote control unit once to show "CD VOL" on the display.
   DVD-BRT Adjustment: Press "VOL ▲" button on the service remote control unit twice to show "DVD BRT" on the display.
   DVD-SHARP Adjustment: Press "VOL ▲" button on the service remote control unit three times to show "DVD SHP" on the display.
3. **CD-VOL Adjustment:** Select "7" by pressing "CH ▲ / ▼" buttons on the service remote control.
   DVD-BRT Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control.
   DVD-SHARP Adjustment: Select "0" by pressing "CH ▲ / ▼" buttons on the service remote control.

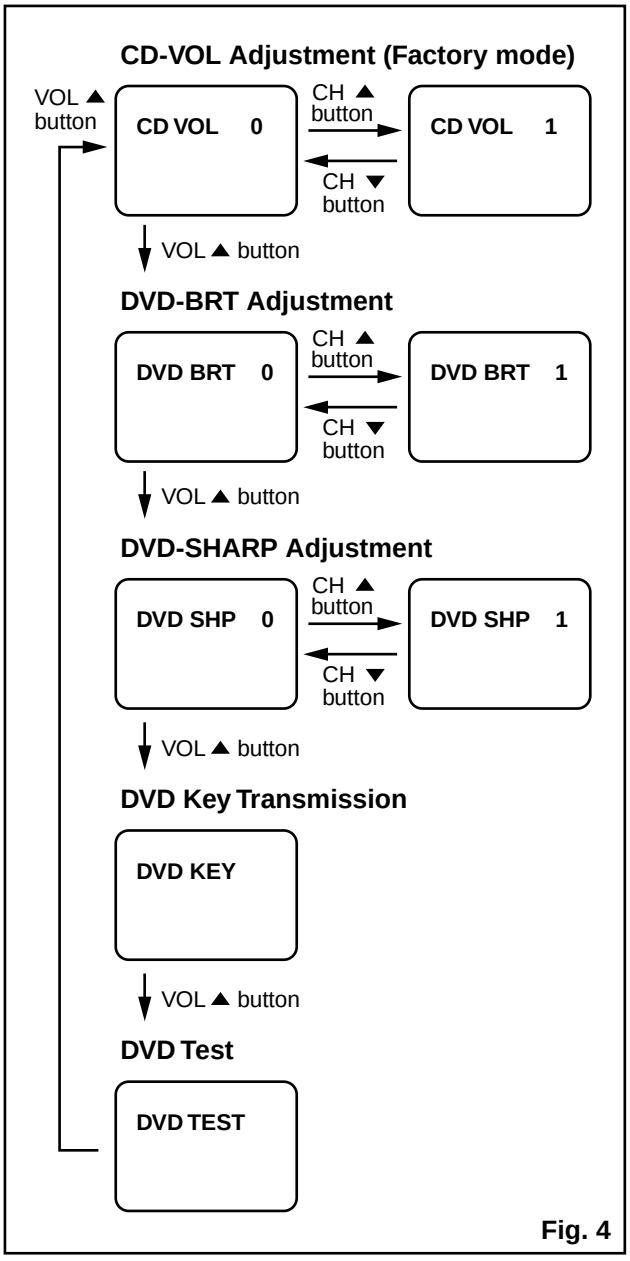


Fig. 4

5. H fo Adjustment

Purpose: To get correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
R583	CH ▲ / ▼ buttons	Video	---
Tape	**M. EQ.**	**Spec.**	
---	Frequency Counter	15.734kHz±300Hz	

Note: R583 --- Sub CBA

1. Connect frequency counter to R583.
2. Operate the unit for at least 20 minutes.
3. Enter the Service mode. (See page 1-7-1.) Press "2" button on the remote control unit and select H-ADJ mode.
4. Press "CH ▲ / ▼" buttons on the remote control unit so that the display will change "0" to "7."
5. At this moment, choose display "0" to "7" when the frequency counter display is closest to 15.734kHz±300Hz.
6. Turn the power off and on again.

6. Cut-off Adjustment

Purpose: To adjust the beam current of R, G, B, and screen voltage.

Symptom of Misadjustment: White color may be reddish, greenish or bluish.

Test point	Adj. Point	Mode	Input
---	Screen-Control CH ▲ / ▼ buttons	RF	Black Raster
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See Reference Notes below	

Figure

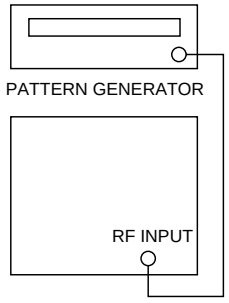


Fig. 5

Notes: Screen Control --- FBT (Sub CBA), FBT= Fly Back Transformer,
Use the Remote Control Unit.

1. Degauss the CRT and allow the unit to operate for 20 minutes before starting the alignment.
2. Input the Black raster signal from RF input.
3. Enter the Service mode. (See page 1-7-1.)
4. Press the "VOL ▼" button.
   (Press "VOL ▼" then display will change CUT OFF/ DRIVE and 7Fh adjustment).
5. Choose CUT OFF/DRIVE mode then press "1" button. This adjustment mode is CUT OFF (R).
6. Increase the screen control so that the horizontal line just appears on the CRT.
7. Press the "CH ▲ / ▼" button until the horizontal line becomes white.
8. Choose CUT OFF/DRIVE mode then press "2" button. This adjustment mode is CUT OFF (G). Press "CH ▲ / ▼" until the horizontal line becomes white.
9. Choose CUT OFF/DRIVE mode then press "3" button. This adjustment mode is CUT OFF (B). Press "CH ▲ / ▼" until the horizontal line becomes white.
10. Turn the power off and on again.

7. H. Size Adjustment

Purpose: To obtain correct size of screen image.

Symptom of Misadjustment: Size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	VR531	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90+1%/-5%	

Note: VR531 --- Sub CBA

1. Input Monoscope pattern.
2. Adjust VR531 so that the size of Monoscope pattern are equal to each other. (90+1%/-5%)

8. H. Pincushion Adjustment

Purpose: To obtain straight line on the screen.

Symptom of Misadjustment: Straight line image may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	VR530	---	Cross hatch
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	

Note: VR530 --- Sub CBA

1. Input Cross hatch pattern.
2. Adjust VR530 so that the lines of the Cross hatch pattern become straight.

9. White Balance Adjustment

Purpose: To mix red, green and blue beams correctly for pure white.

Symptom of Misadjustment: White becomes bluish or reddish.

Test Point	Adj. Point	Mode	Input
Screen	CH ▲ / ▼ buttons	RF	White Raster (APL 100%)
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator, Color analyzer	See below	
Figure			

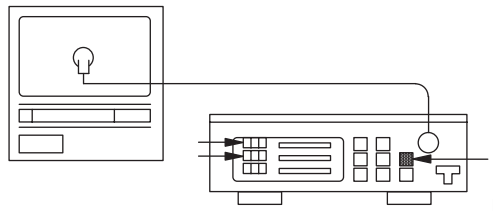


Fig. 6

Note: Use service remote control unit

1. Operate the unit more than 20 minutes.
2. Face the unit to the east. Degauss the CRT using a degaussing coil.
3. Input the White Raster (APL 100%).
4. Set the color analyzer to the CHROMA mode and after zero point calibration, bring the optical receptor to the center on the tube surface (CRT).
5. Enter the Service mode. Press "VOL ▼" button on the service remote control unit and select "C/D" mode. (Display changes "C/D" and "7F" cyclically when "VOL ▼" button is pressed.)
6. Press "4" button on the service remote control unit for Red adjustment. Press "5" button on the service remote control unit for Blue adjustment.
7. In each color mode, press "CH ▲ / ▼" button to adjust the values of color.
8. Adjust Red and Blue color so that the temperature becomes 9200K (x: 286 / y: 294) ±3%.
9. At this time, re-check that horizontal line is white. If not, re-adjust Cut-off Adjustment until the horizontal line becomes pure white.
10. Turn off and on again to return to normal mode. Receive APL 100% white signal and confirm that Chroma temperatures become 9200K (x: 286 / y: 294) ±3%.

Note: Confirm that Cut Off Adj. is correct after this adjustment, and attempt Cut Off Adj. if needed.

10. Sub-Brightness Adjustment

Purpose: To get proper brightness.

Symptom of Misadjustment: If Sub-Brightness is incorrect, proper brightness cannot be obtained by adjusting the Brightness Control.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	SMPTE 7.5IRE
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below	
Figure			

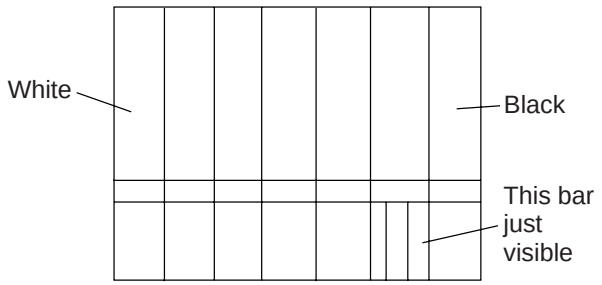


Fig. 7

Note: SMPTE Setup level --- 7.5 IRE

1. Enter the Service mode. (See page 1-7-1.) Then input SMPTE signal from RF input.
2. Press "PICTURE" button. (Press "PICTURE" button then display will change BRT, CNT, COL, TNT, and V-TNT). Select BRT and press "CH ▲ / ▼" buttons so that the bar is just visible (See above figure).
3. Turn the power off and on again.

11. Focus Adjustment

Purpose: Set the optimum Focus.

Symptom of Misadjustment: If Focus Adjustment is incorrect, blurred images are shown on the display.

Test point	Adj. Point	Mode	Input
---	Focus Control	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below.	

Note: Focus VR --- FBT (Sub CBA), FBT= Fly Back Transformer

1. Operate the unit more than 30 minutes.
2. Face the unit to the East and degauss the CRT using a degaussing coil.
3. Input the monoscope pattern.
4. Adjust the Focus Control on the FBT to obtain a clear picture.

12. H. Position Adjustment

Purpose: To obtain correct horizontal position and size of screen image.

Symptom of Misadjustment: Horizontal position and size of screen image may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	---	

1. Enter the Service mode. (See page 1-7-1.)
   Press "8" button on the remote control unit and select H-P mode.
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the left and right side of the monoscope pattern are equal to each other.
4. Turn the power off and on again.

13. V. Shift Adjustment

Purpose: To obtain correct vertical position of screen image.

Symptom of Misadjustment: If V. position is incorrect, vertical position of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	---	

1. Enter the Service mode. (See page 1-7-1.)
   Press "9" button on the remote control unit and select V-P mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the top and bottom of the monoscope pattern are equal to each other.

14. V. Size Adjustment

Purpose: To obtain correct vertical height of screen image.

Symptom of Misadjustment: If V. Size is incorrect, vertical height of image on the screen may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	CH ▲ / ▼ buttons	---	Monoscope
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	90±5%	

1. Enter the Service mode. (See page 1-7-1.)
   Press "9" button on the remote control unit and select V-S mode. (Press "9" button then display will change to V-P and V-S).
2. Input monoscope pattern.
3. Press "CH ▲ / ▼" buttons on the remote control unit so that the monoscope pattern is 90±5% of display size and the circle is round.

15. Head Switching Position Adjustment

Purpose: Determine the Head Switching Position during Playback.

Symptom of Misadjustment: May cause Head Switching Noise or Vertical Jitter in the picture.

Note: Unit reads Head Switching Position automatically and displays it on the screen (Upper Left Corner).

1. Playback test tape (FL8A, FL8N).
2. Enter the Service mode. (See page 1-7-1.)
   Then press the number "5" button on the remote control unit.
3. The Head Switching position will display on the screen; if adjustment is necessary follow step 4. 6.5H(412.7µs) is preferable.
4. Press "CH ▲" or "CH ▼" button on the remote control unit if necessary. The value will be changed in 0.5H steps up or down. Adjustable range is up to 9.5H. If the value is beyond adjustable range, the display will change as:
   Lower out of range: 0.0H
   Upper out of range: -.-H
5. Turn the power off and on again.

The following 2 adjustments normally are not attempted in the field. They should be done only when replacing the CRT then adjust as a preparation.

16. Purity Adjustment

Purpose: To obtain pure color.

Symptom of Misadjustment: If Color Purity Adjustment is incorrect, large areas of color may not be properly displayed.

Test point	Adj. Point	Mode	Input
---	Deflection Yoke Purity Magnet	---	*Red Color
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below.	

Figure

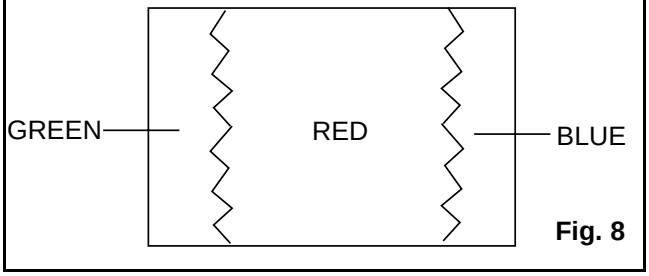


Fig. 8

* This becomes RED COLOR if the 7KEY is pressed while in service mode.

1. Set the unit facing east.
2. Operate the unit for over 30 minutes before adjusting.
3. Fully degauss the unit using an external degaussing coil.
4. Set the unit to the AUX mode which is located before CH2 then input a red raster from video in.
5. Loosen the screw on the Deflection Yoke Clamper and pull the Deflection Yoke back away from the screen. (See Fig. 9.)
6. Loosen the Ring Lock and adjust the Purity Magnets so that a red field is obtained at the center of the screen. Tighten Ring Lock. (See Fig. 8,9.)
7. Slowly push the Deflection Yoke toward the bell of the CRT and set it where a uniform red field is obtained.
8. Tighten the clamp screw on the Deflection Yoke.

17. Convergence Adjustment

Purpose: To obtain proper convergence of red, green and blue beams.

Symptom of Misadjustment: If Convergence Adjustment is incorrect, the edge of white letters may have color edges.

Test point	Adj. Point	Mode	Input
---	C.P. Magnet (RB), C.P. Magnet (RB-G), Deflection Yoke	---	Dot Pattern or Crosshatch
Tape	**M. EQ.**	**Spec.**	
---	Pattern Generator	See below.	

Figure

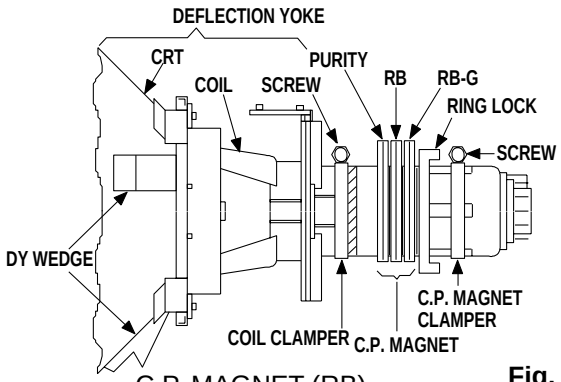


Fig. 9

C.P. MAGNET (RB)

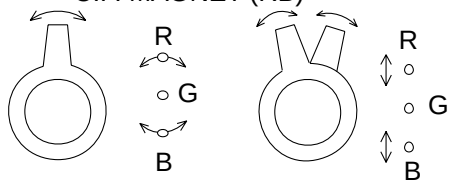


Fig. 10

C.P. MAGNET (RB-G)

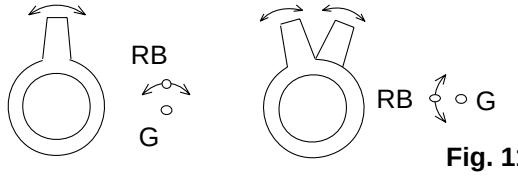


Fig. 11

1. Set the unit to the AUX mode which is located before CH2 then input a dot or crosshatch pattern.
2. Loosen the Ring Lock and align red with blue dots or crosshatch at the center of the screen by rotating (RB) C.P. Magnets. (See Fig. 10.)
3. Align red / blue with green dots at the center of the screen by rotating (RB-G) C.P. Magnet. (See Fig. 11.)
4. Fix the C.P. Magnets by tightening the Ring Lock.
5. Remove the DY Wedges and slightly tilt the Deflection Yoke horizontally and vertically to obtain the best overall convergence.
6. Fix the Deflection Yoke by carefully inserting the DY Wedges between CRT and Deflection Yoke.

FIRMWARE RENEWAL MODE

1. Turn the power on and press [SELECT] button on the remote control unit to put the DVD player into DVD mode. Then remove the disc on the tray.
   (It is possible to move to F/W version up mode only when the DVD player is in DVD mode with the tray opened.)
2. To put the DVD player into F/W version up mode, press [9], [8], [7], [6], and [SEARCH MODE] buttons on the remote control unit in that order.
   Fig. a appears on the screen.

"*******" differ depending on the models.

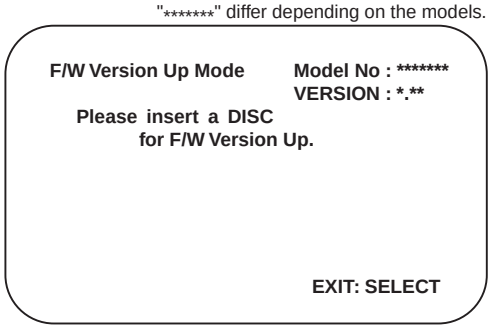


Fig. a Version Up Mode Screen

The DVD player can also enter the version up mode with the tray open. In this case, Fig. a will be shown on the screen while the tray is open.

3. Load the disc for version up.
4. The DVD player enters the F/W version up mode automatically. Fig. c appears on the screen. If you enter the F/W for different models, “Disc Error” will appear on the screen, then the tray will open automatically.

"*******" differ depending on the models.

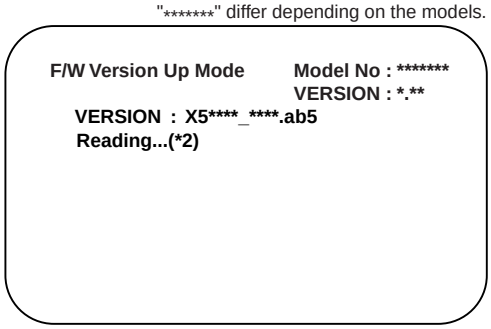


Fig. c Programming Mode Screen

The appearance shown in (*2) of Fig. c is described as follows:

No.	Appearance	State
1	Reading...	Sending files into the memory
2	Erasing...	Erasing previous version data
3	Programming...	Writing new version data

5. After programming is finished, the tray opens automatically. Fig. e appears on the screen and the checksum in (*3) of Fig. e.

"*******" differ depending on the models.

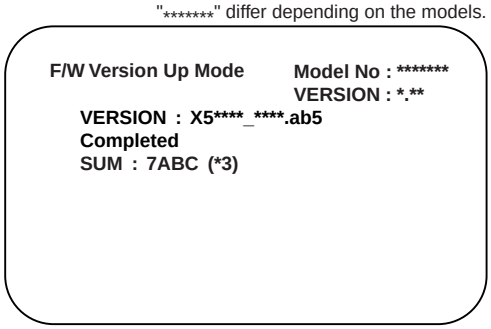


Fig. e Completed Program Mode Screen

At this time, no buttons are available.

6. Remove the disc on the tray.
7. Press [SELECT] button on the remote control unit to go to TV mode, or press [POWER] button on the unit to turn the power off.
8. Press [SELECT] button on the remote control unit to put the DVD player into DVD mode again.
9. Press [1], [2], [3], [4], and [DISPLAY] buttons on the remote control unit in that order.
   Fig. g appears on the screen.

"*******" differ depending on the models.

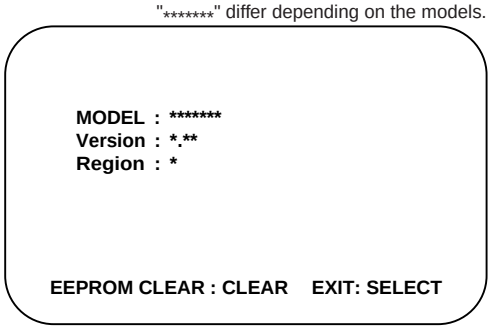


Fig. g

10. Press [CLEAR] button on the remote control unit.
    Fig. h appears on the screen.

"*******" differ depending on the models.

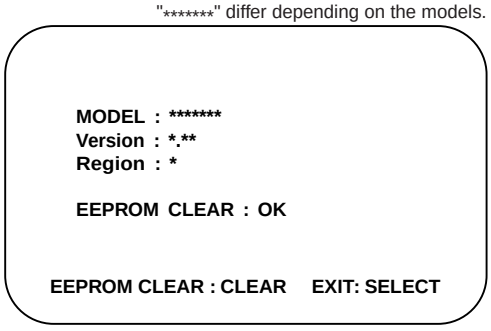


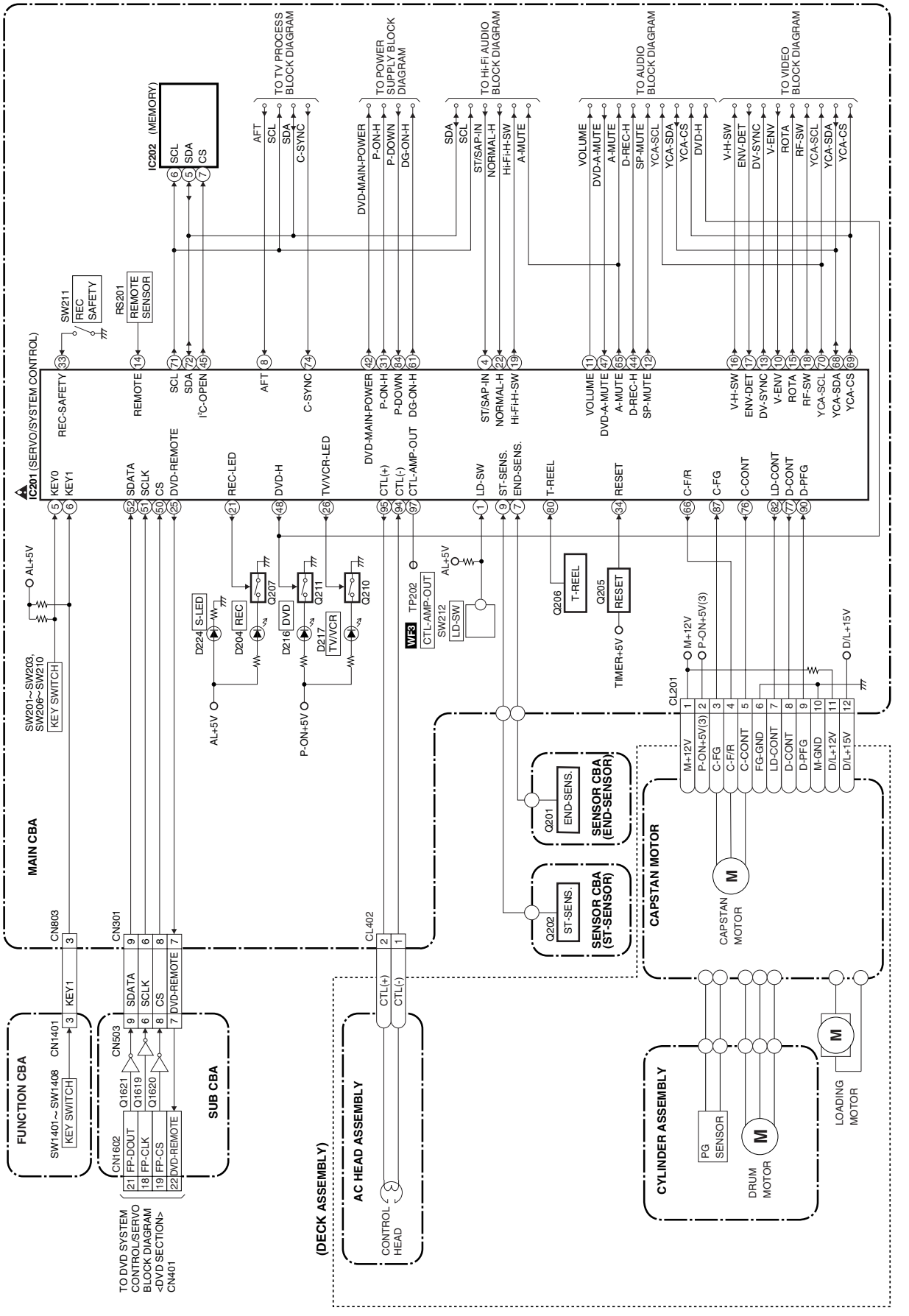
Fig. h

When “OK” appears on the screen, the factory default will be set. Then the firmware renewal mode is complete.

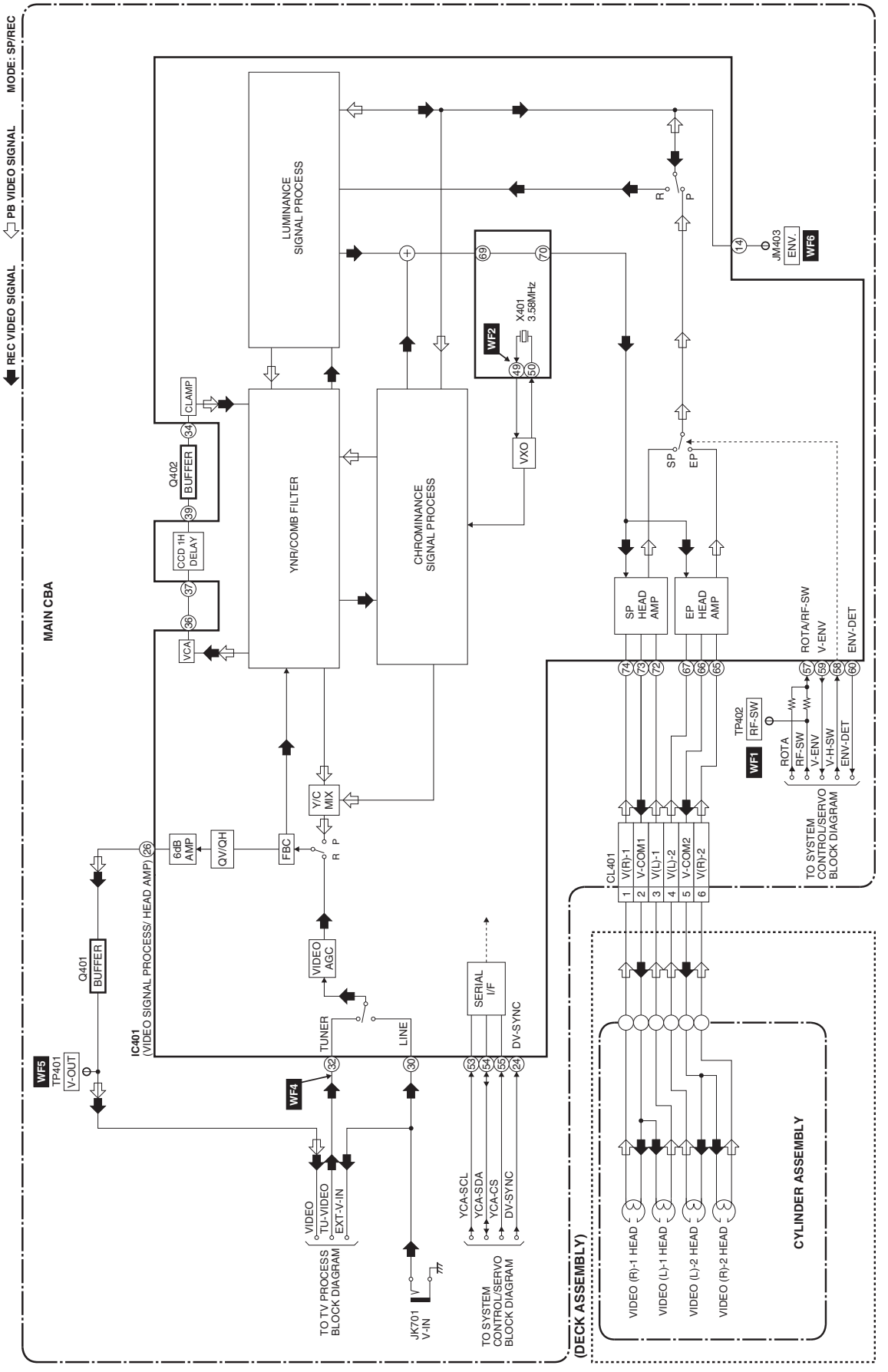
11. To exit this mode, press [CH UP/DOWN] or [SELECT] button to go to TV mode, or press [POWER] button to turn the power off.

BLOCK DIAGRAMS < TV/VCR Section >

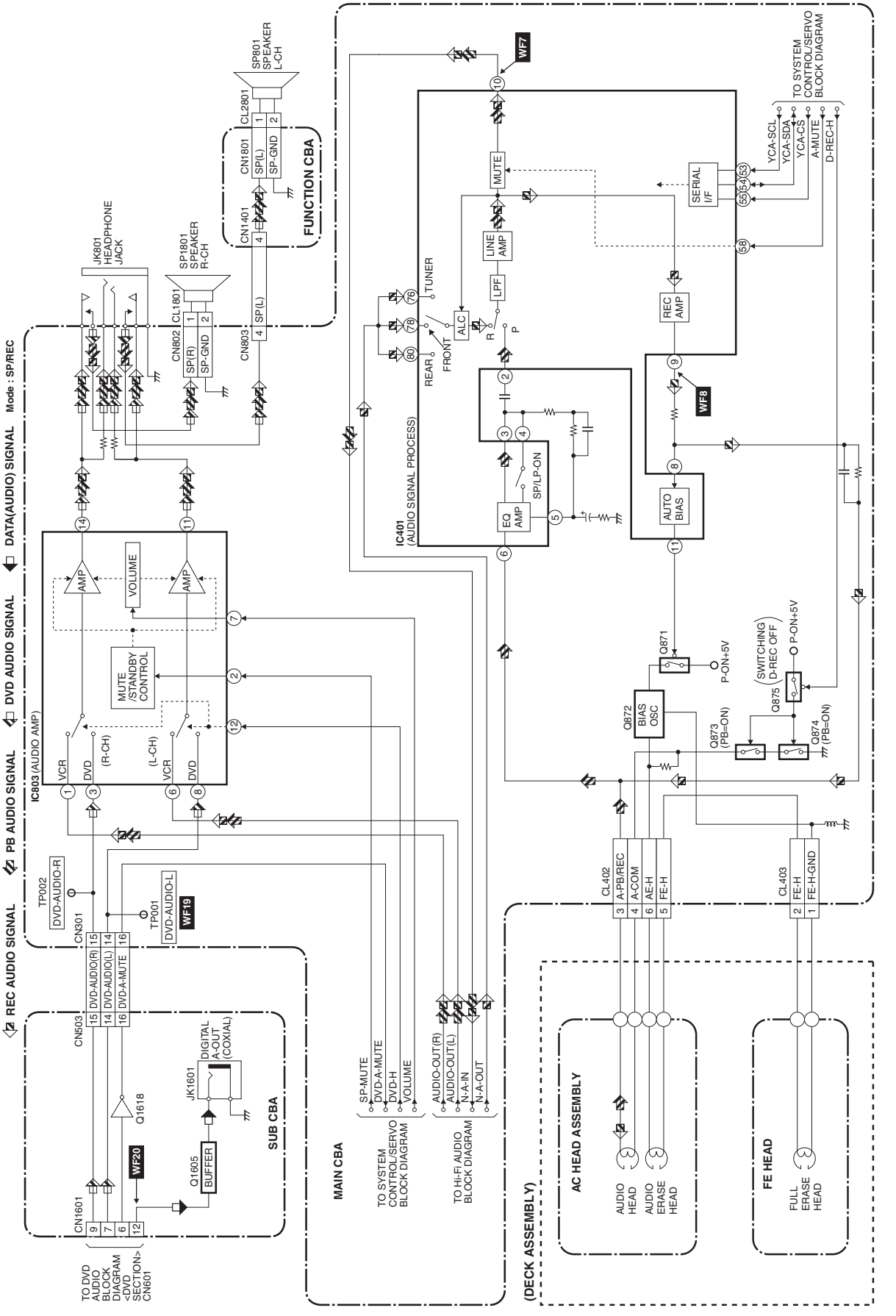
System Control / Servo Block Diagram



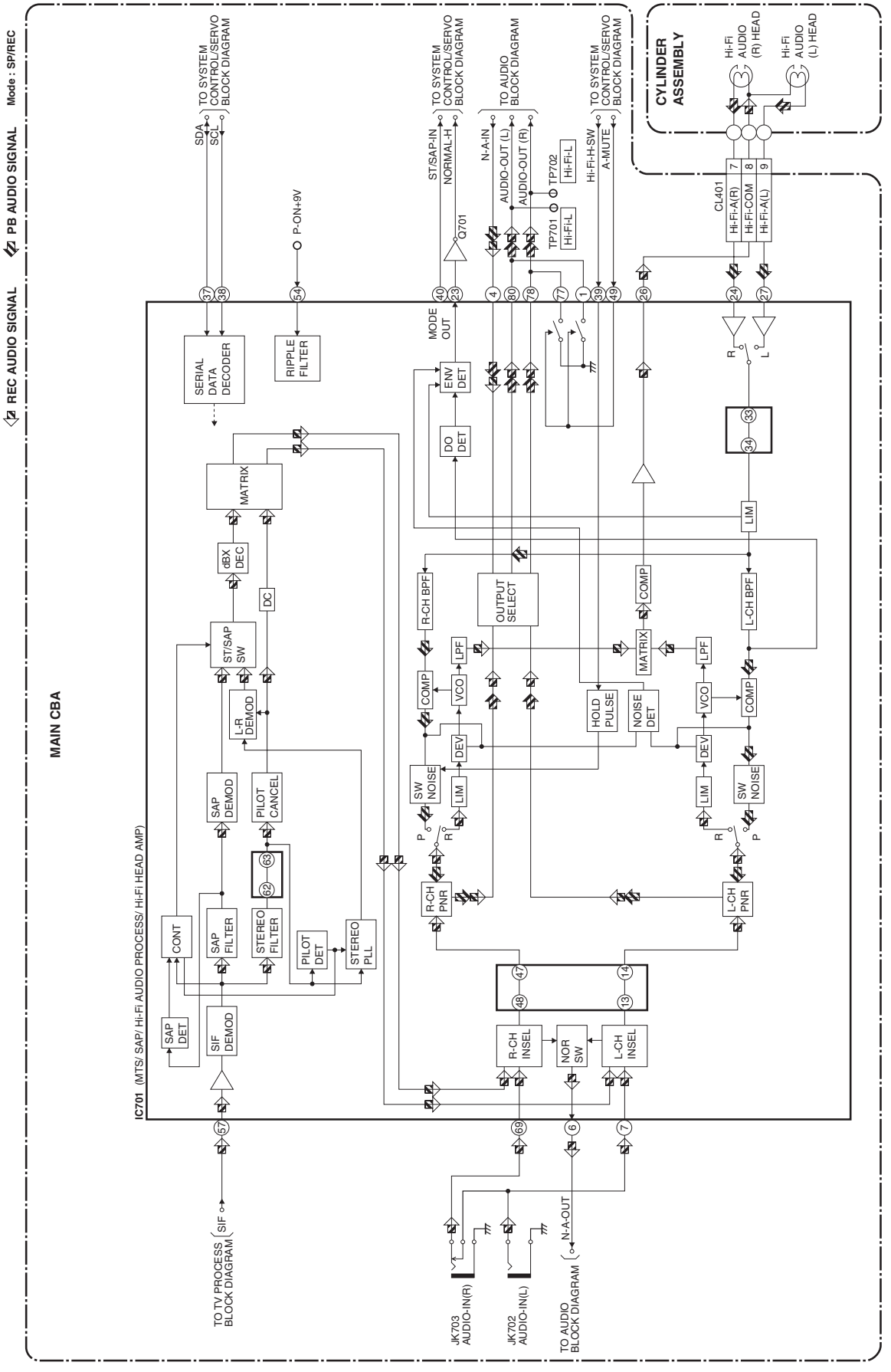
Video Block Diagram



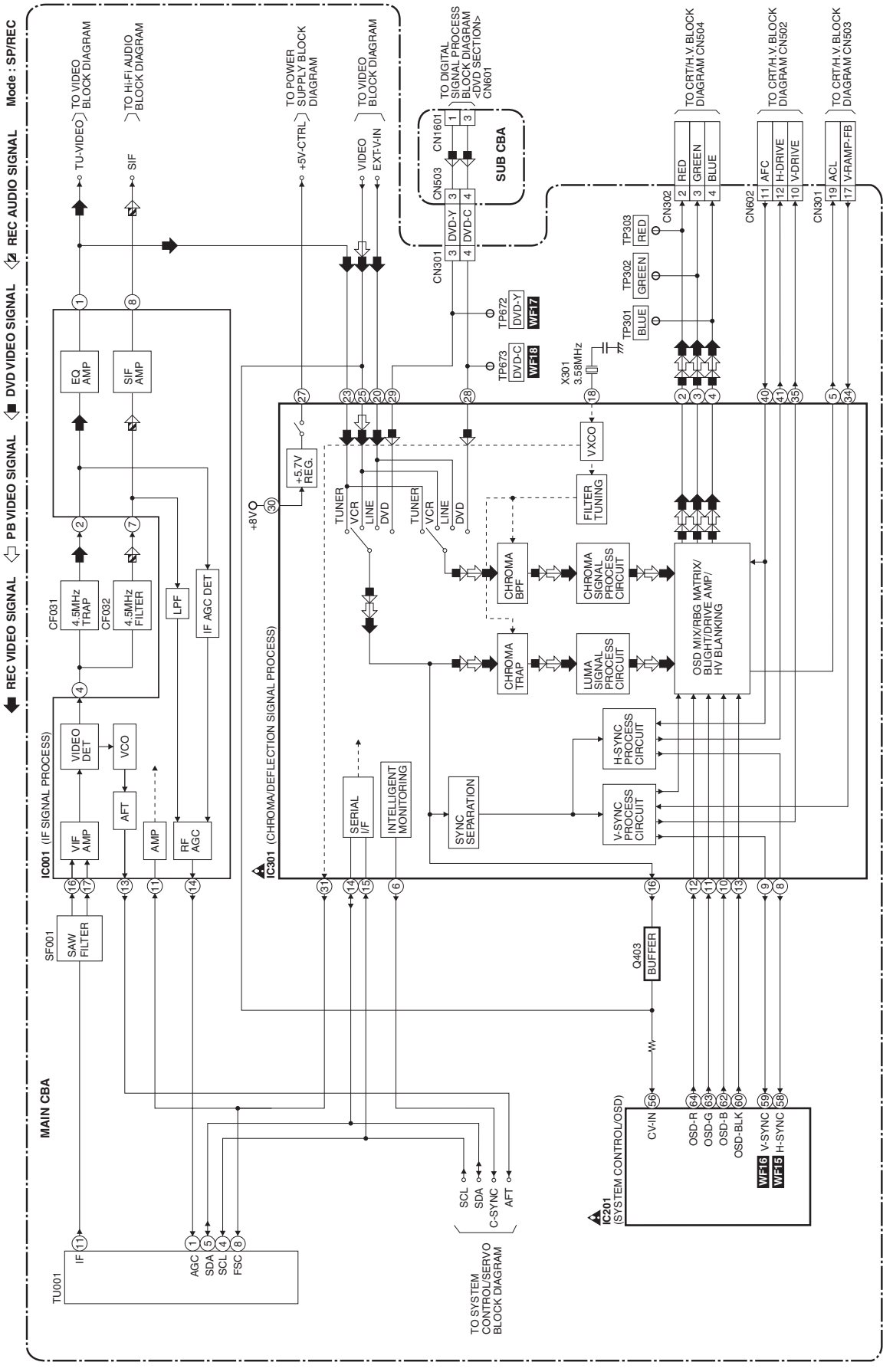
Audio Block Diagram



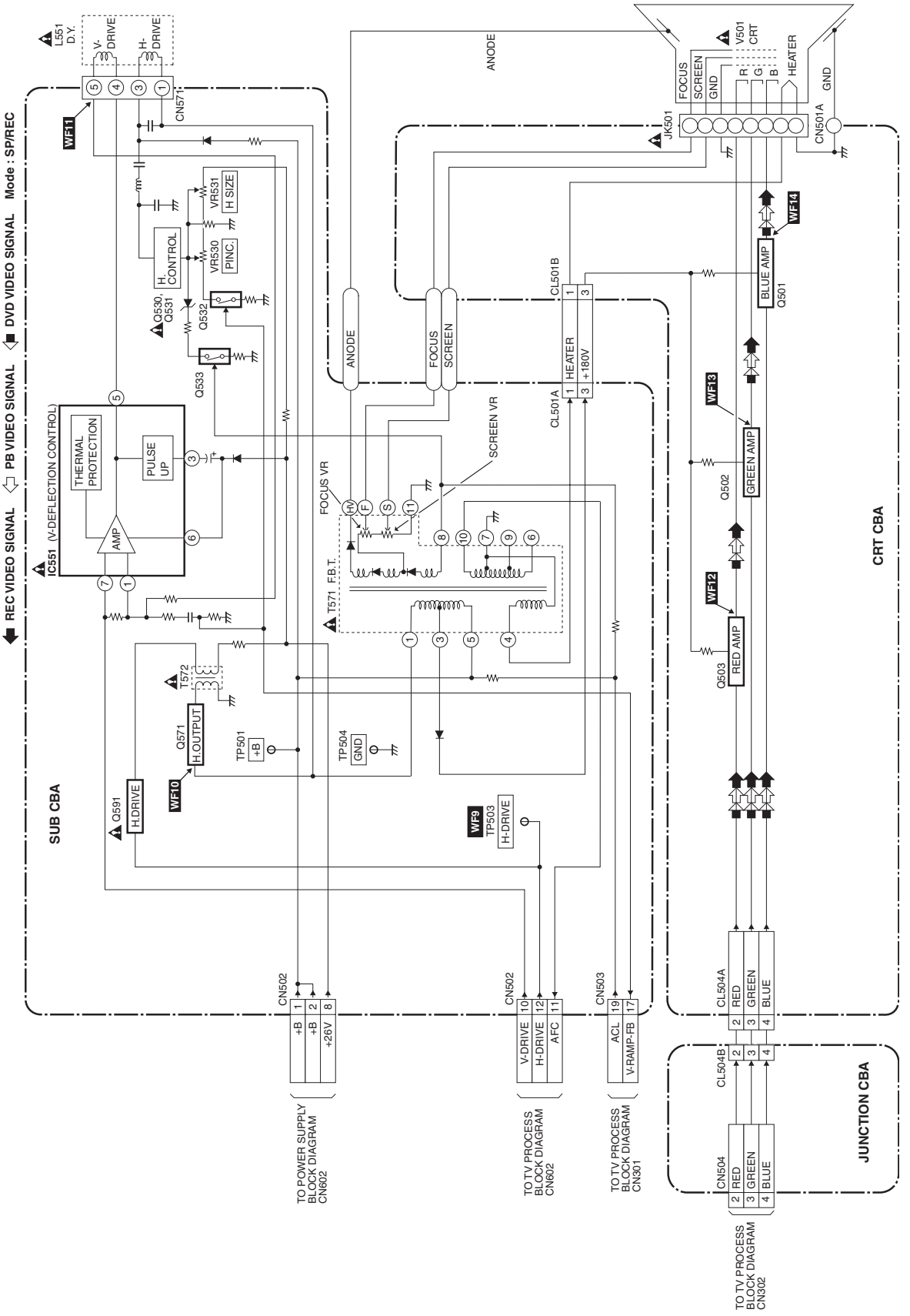
Hi-Fi Audio Block Diagram



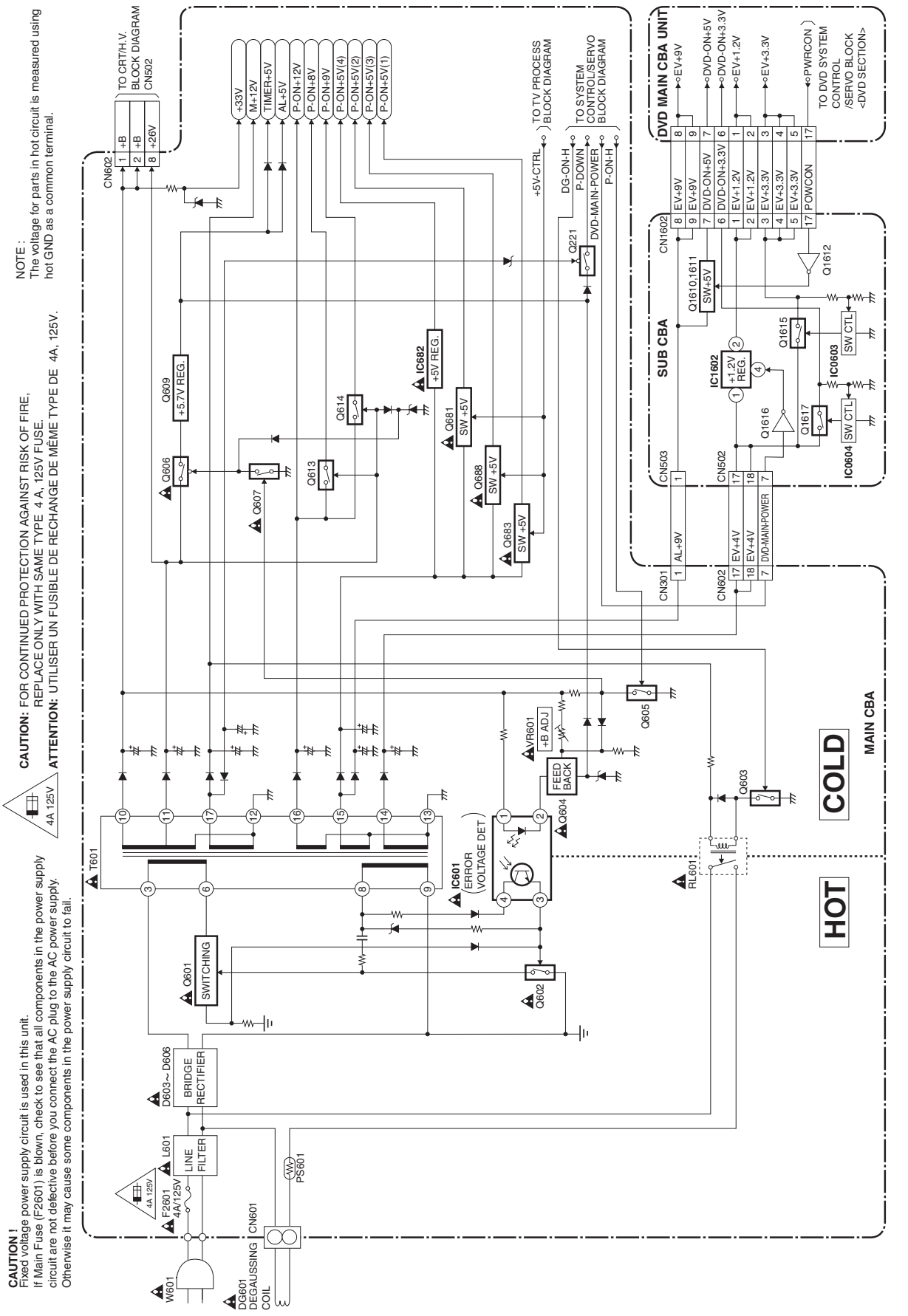
TV Process Block Diagram



CRT/H.V. Block Diagram

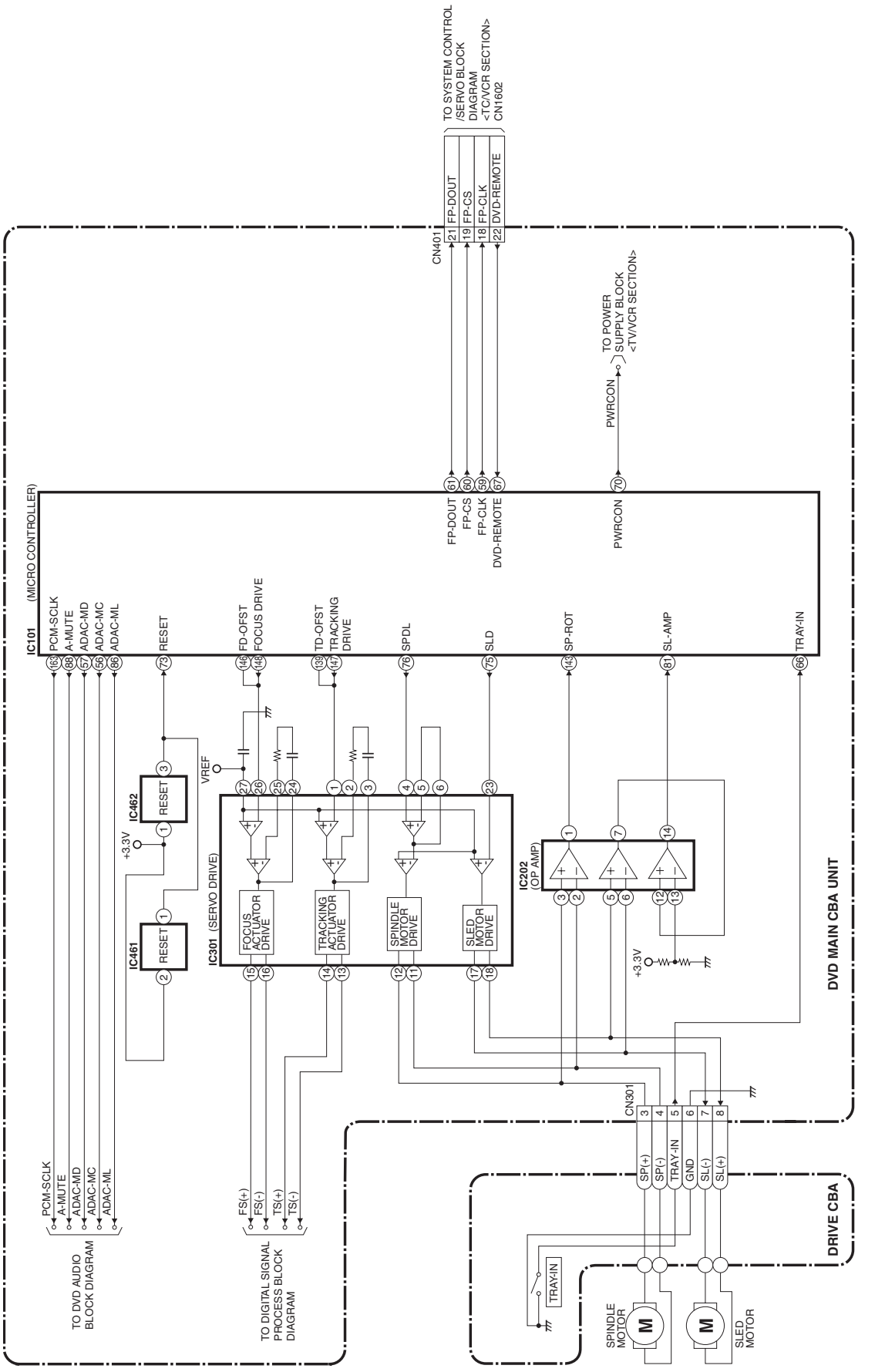


Power Supply Block Diagram

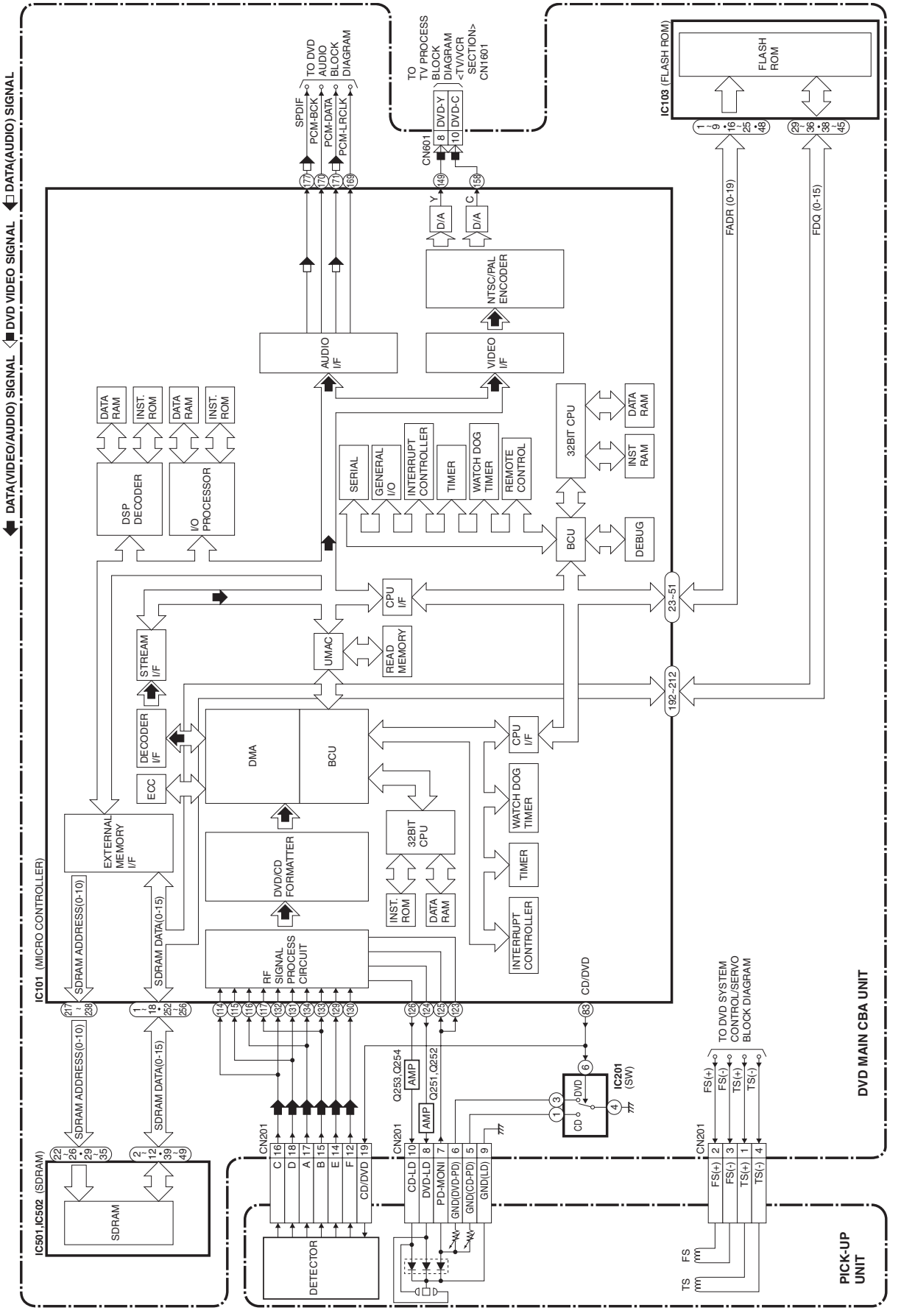


BLOCK DIAGRAMS < DVD Section >

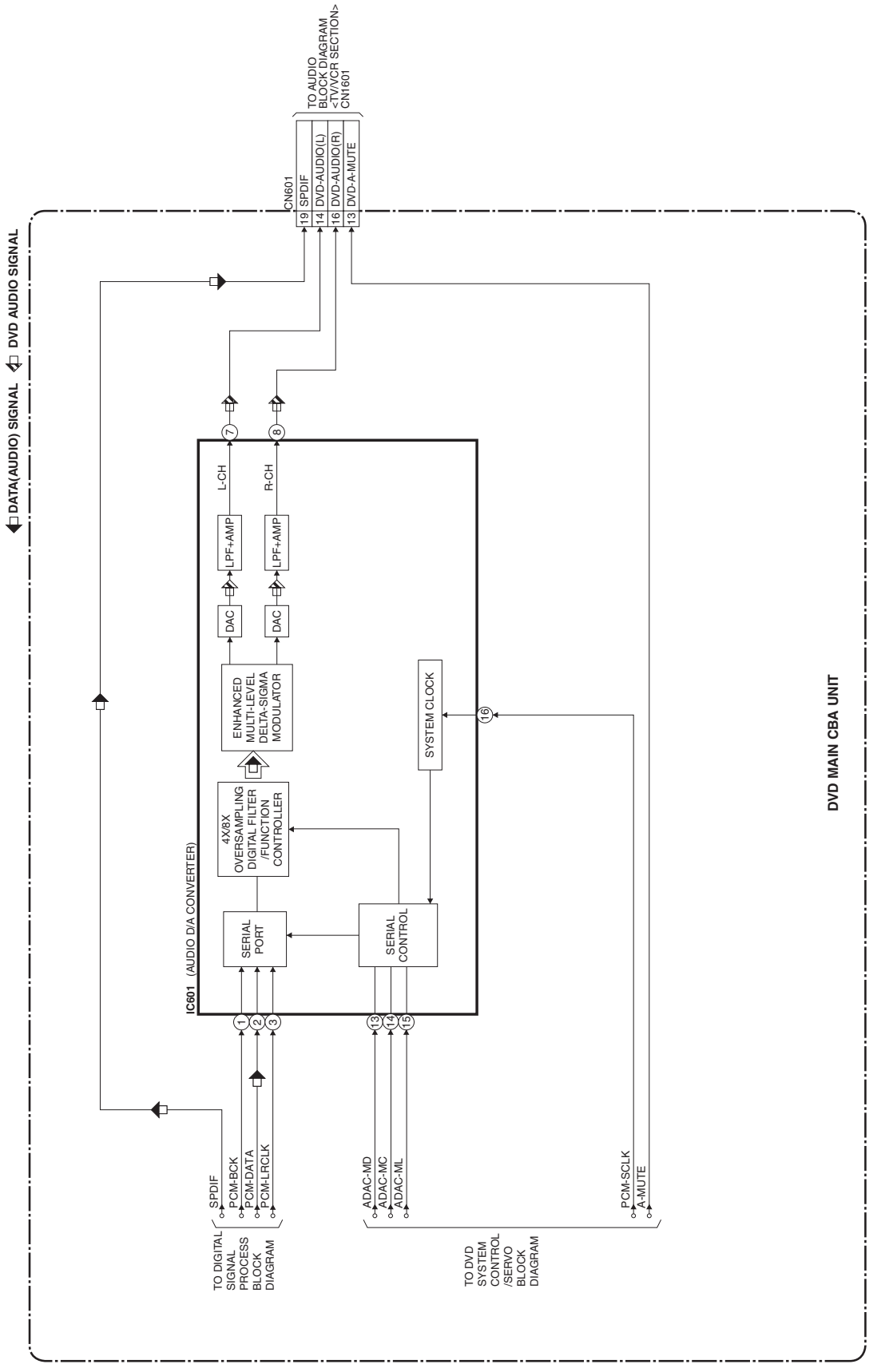
DVD System Control / Servo Block Diagram



Digital Signal Process Block Diagram



DVD Audio Block Diagram



SCHEMATIC DIAGRAMS / CBA'S AND TEST POINTS

Standard Notes

Warning

Many electrical and mechanical parts in this chassis have special characteristics. These characteristics often pass unnoticed and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts that have these special safety characteristics are identified in this manual and its supplements; electrical components having such features are identified by the mark " ⚠ " in the schematic diagram and the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts that do not have the same safety characteristics as specified in the parts list may create shock, fire, or other hazards.

Capacitor Temperature Markings

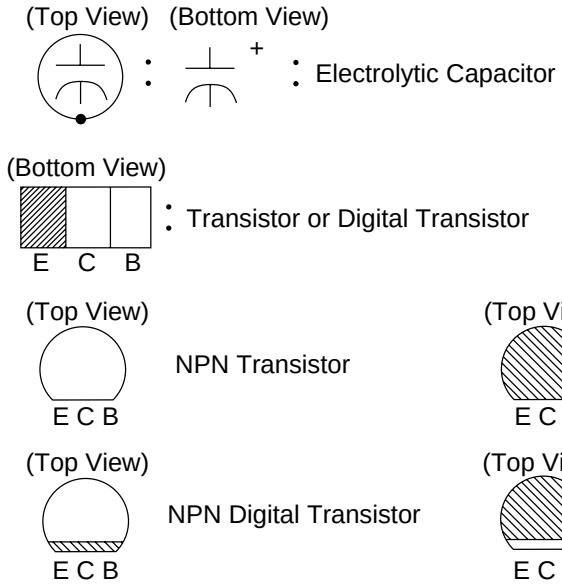
Mark	Capacity change rate	Standard temperature	Temperature range
(B)	±10%	20°C	-25~+85°C
(F)	+30 -80%	20°C	-25~+85°C
(SR)	±15%	20°C	-25~+85°C
(Z)	+30 -80%	20°C	-10~+70°C

Capacitors and transistors are represented by the following symbols.

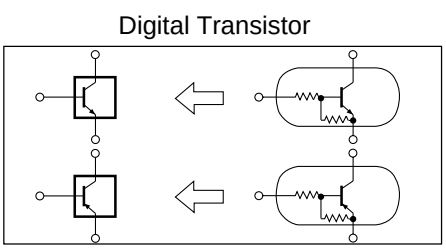
Note:

1. Do not use the part number shown on these drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since these drawings were prepared.
2. All resistance values are indicated in ohms ($K=10^3$, $M=10^6$).
3. Resistor wattages are 1/4W or 1/6W unless otherwise specified.
4. All capacitance values are indicated in μF ($P=10^{-6}\mu F$).
5. All voltages are DC voltages unless otherwise specified.

CBA Symbols



Schematic Diagram Symbols



LIST OF CAUTION, NOTES, AND SYMBOLS USED IN THE SCHEMATIC DIAGRAMS ON THE FOLLOWING PAGES:

1. **CAUTION:** FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE_A,_V FUSE.
   ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE_A,_V.

2. **CAUTION:**

   Fixed Voltage (or Auto voltage selectable) power supply circuit is used in this unit.
   If Main Fuse (F2601) is blown, first check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

3. **Note:**

(1) Do not use the part number shown on the drawings for ordering. The correct part number is shown in the parts list, and may be slightly different or amended since the drawings were prepared.

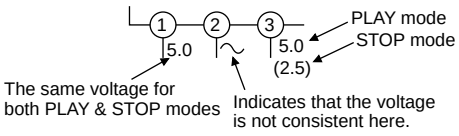
(2) To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Note: Mark "•" is a leadless (chip) component

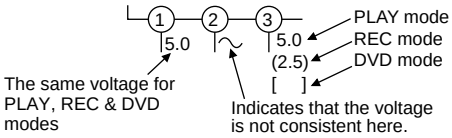
5. Mode: SP/REC

6. Voltage indications for PLAY and REC modes on the schematics are as shown below:

< DVD Section >



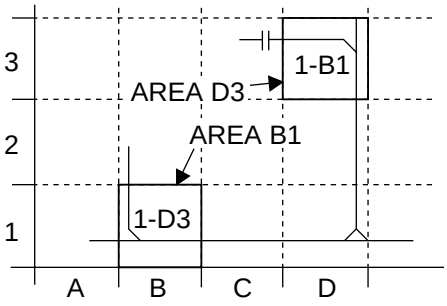
< TV/VCR Section >



Unit: Volts

7. How to read converged lines

Examples:
1. "1-D3" means that line number "1" goes to area "D3".
2. "1-B1" means that line number "1" goes to area "B1".



8. Test Point Information

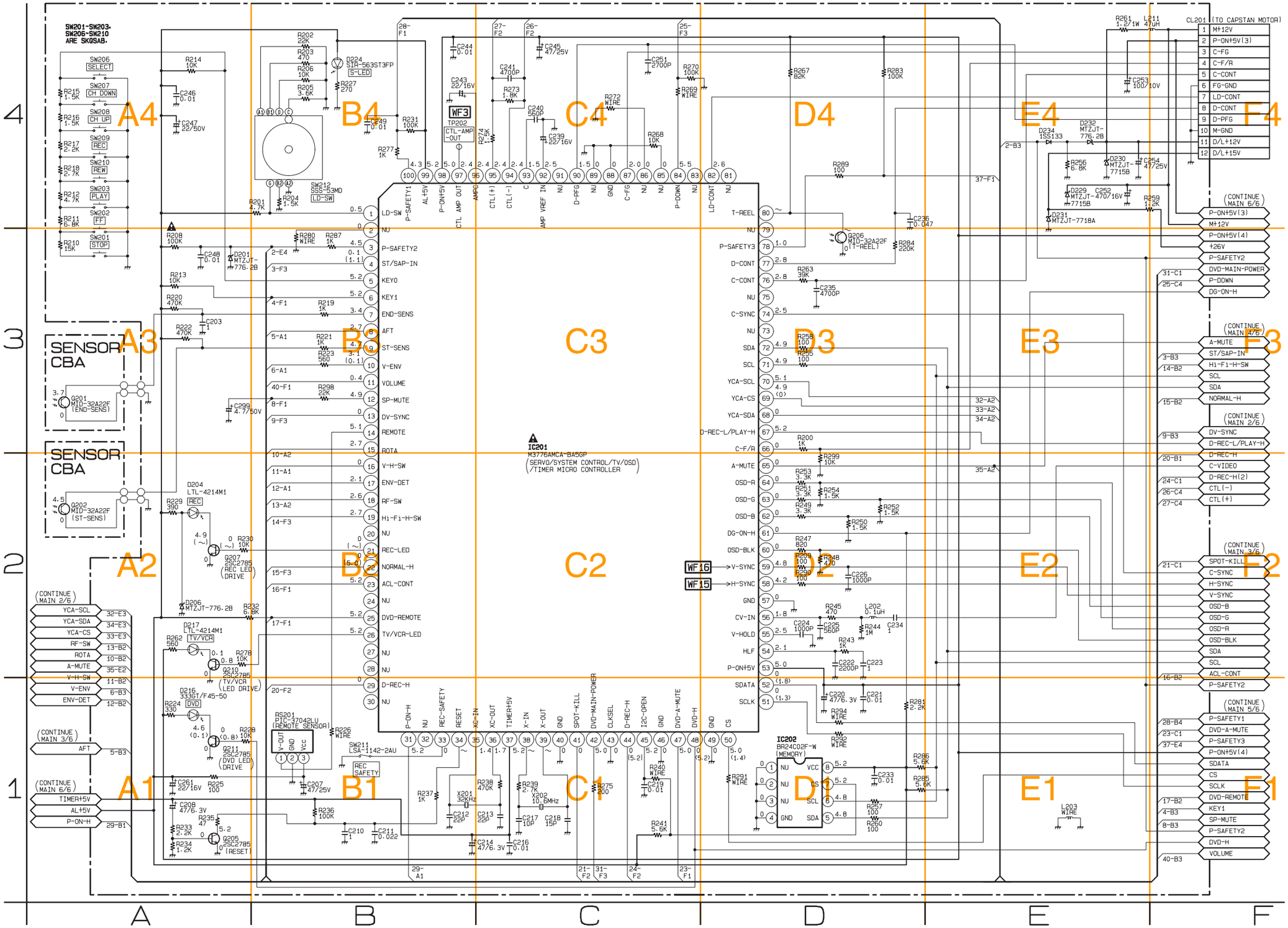
: Indicates a test point with a jumper wire across a hole in the PCB.

: Used to indicate a test point with a component lead on foil side.

: Used to indicate a test point with no test pin.

: Used to indicate a test point with a test pin.

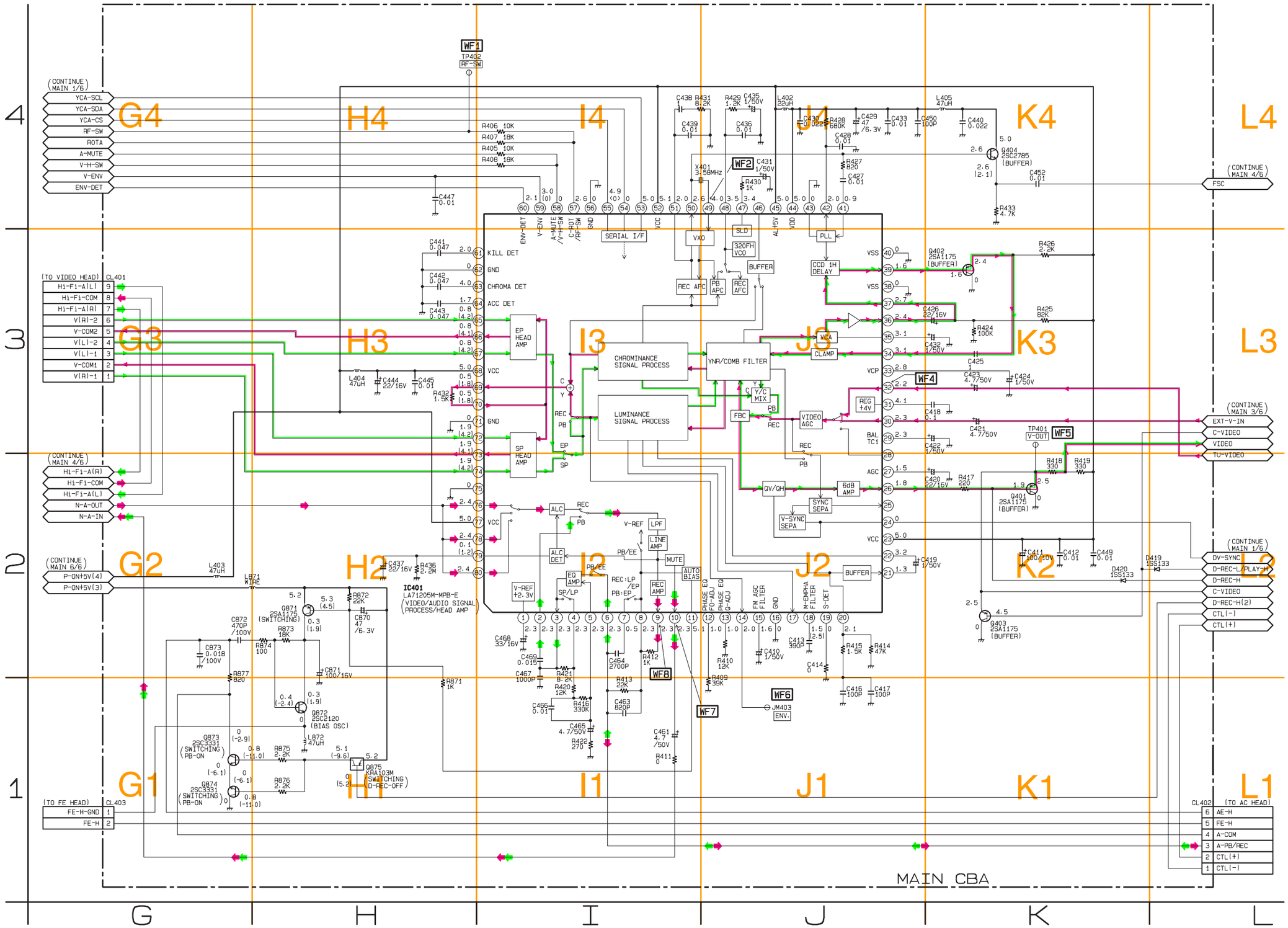
Main 1/6 Schematic Diagram < TV/VCR Section >



MAIN 1/6	
Ref No.	Position
ICS	
IC201	C-3
IC202	D-1
TRANSISTORS	
Q205	A-1
Q206	D-3
Q207	A-2
Q210	A-2
Q211	A-1
CONNECTOR	
CL201	F-4
TEST POINT	
TP202	B-4

Main 2/6 Schematic Diagram ＜TV/VCR Section＞

REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO(TV/VCR/LINE) SIGNAL
PB AUDIO (TV/VCR/LINE) SIGNAL

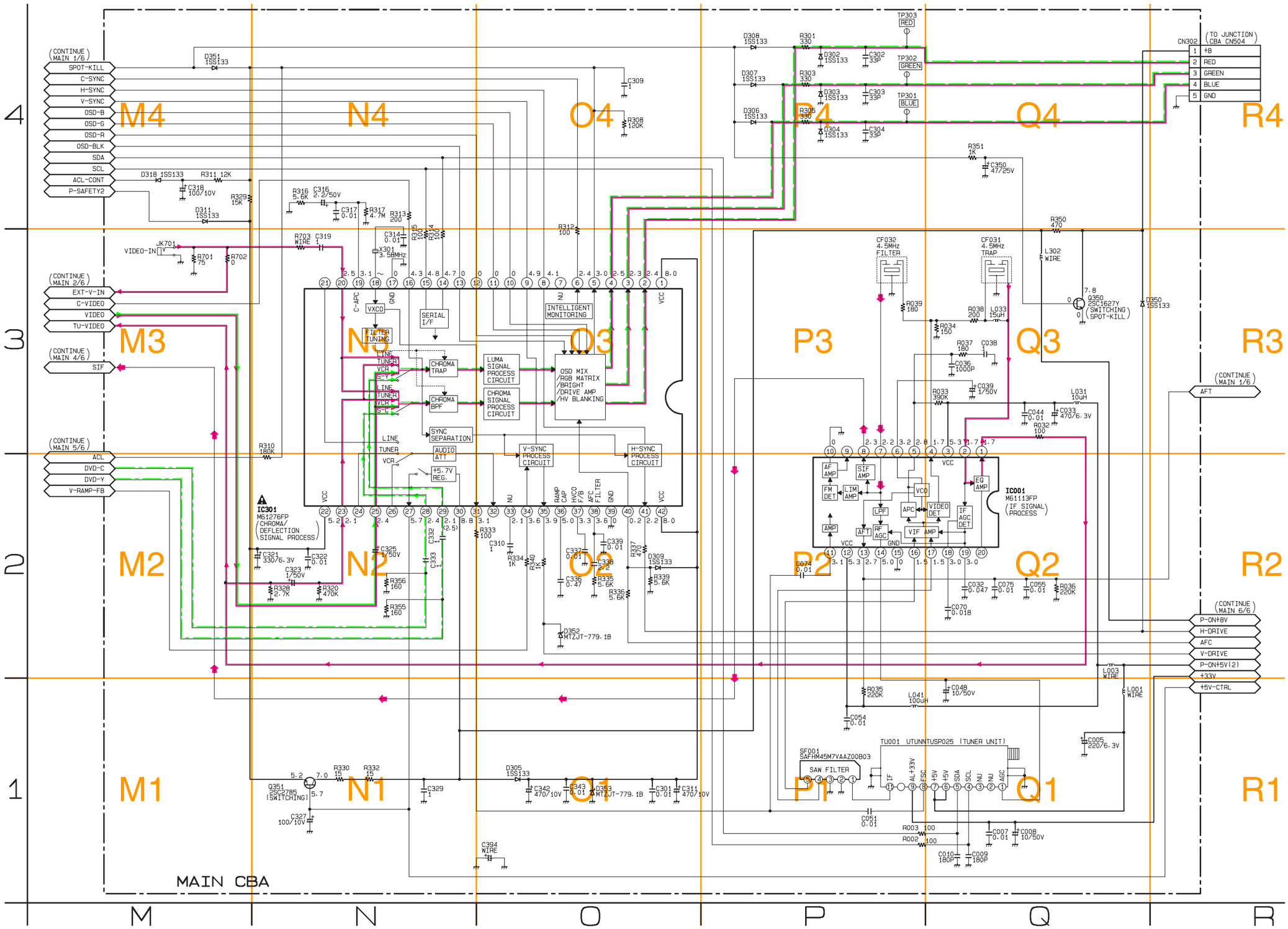


MAIN 2/6

Ref No.	Position
IC	
IC401	H-2
TRANSISTORS	
Q401	K-2
Q402	K-3
Q403	K-2
Q404	K-4
Q871	H-2
Q872	H-1
Q873	G-1
Q874	G-1
Q875	H-1
CONNECTORS	
CL401	G-3
CL402	L-1
CL403	G-1
TEST POINTS	
JM403	J-1
TP401	K-3
TP402	H-4

Main 3/6 Schematic Diagram < TV/VCR Section >

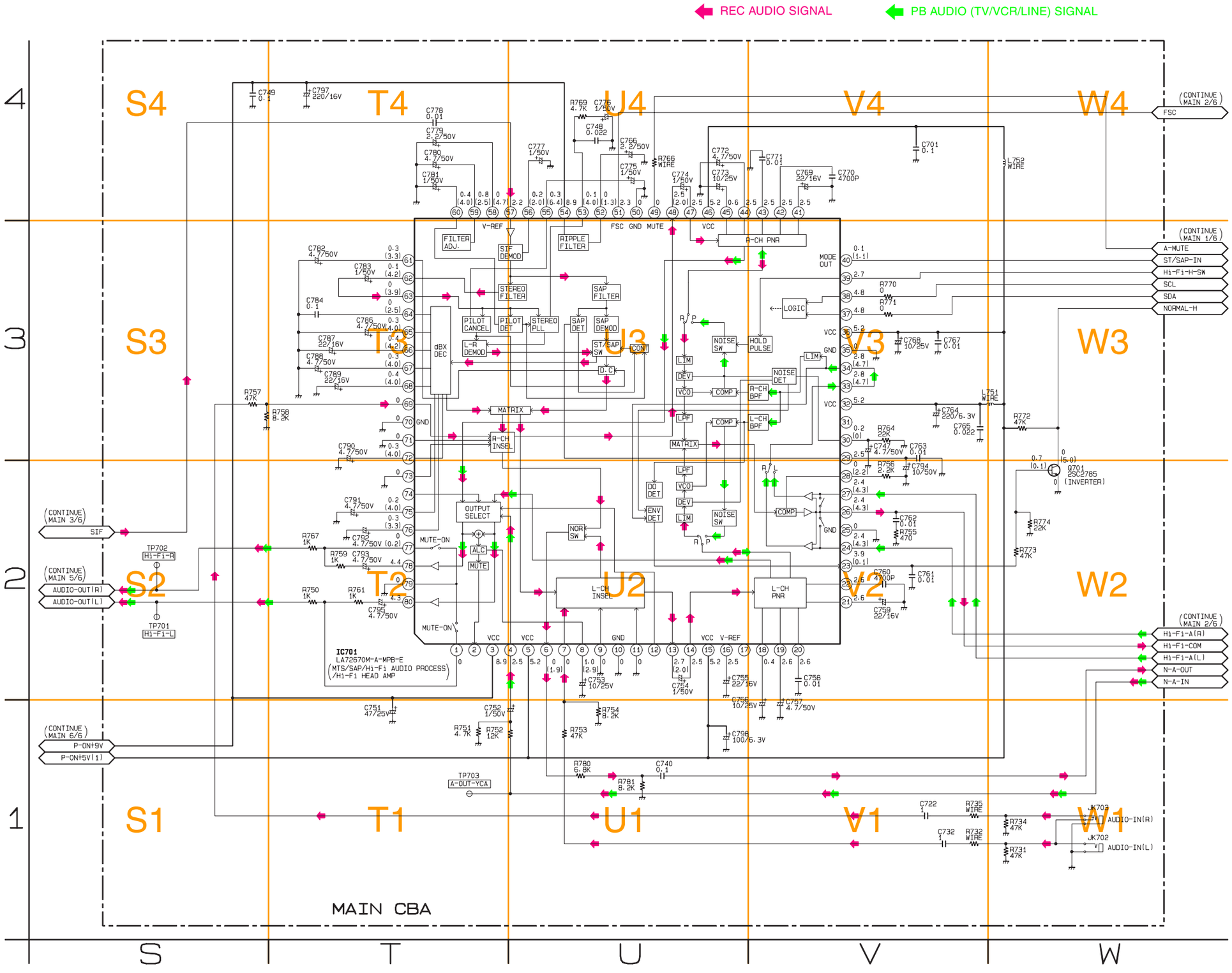
REC VIDEO SIGNAL
REC AUDIO SIGNAL
PB VIDEO(TV/VCR/LINE) SIGNAL
DVD VIDEO SIGNAL
PB VIDEO(TV/VCR/LINE)+DVD VIDEO SIGNAL
PB AUDIO (TV/VCR/LINE) SIGNAL
DVD AUDIO SIGNAL



MAIN 3/6

Ref No.	Position
ICS	
IC001	Q-2
IC301	N-2
TRANSISTORS	
Q350	Q-3
Q351	N-1
CONNECTOR	
CN302	R-4
TEST POINTS	
TP301	P-4
TP302	P-4
TP303	P-4

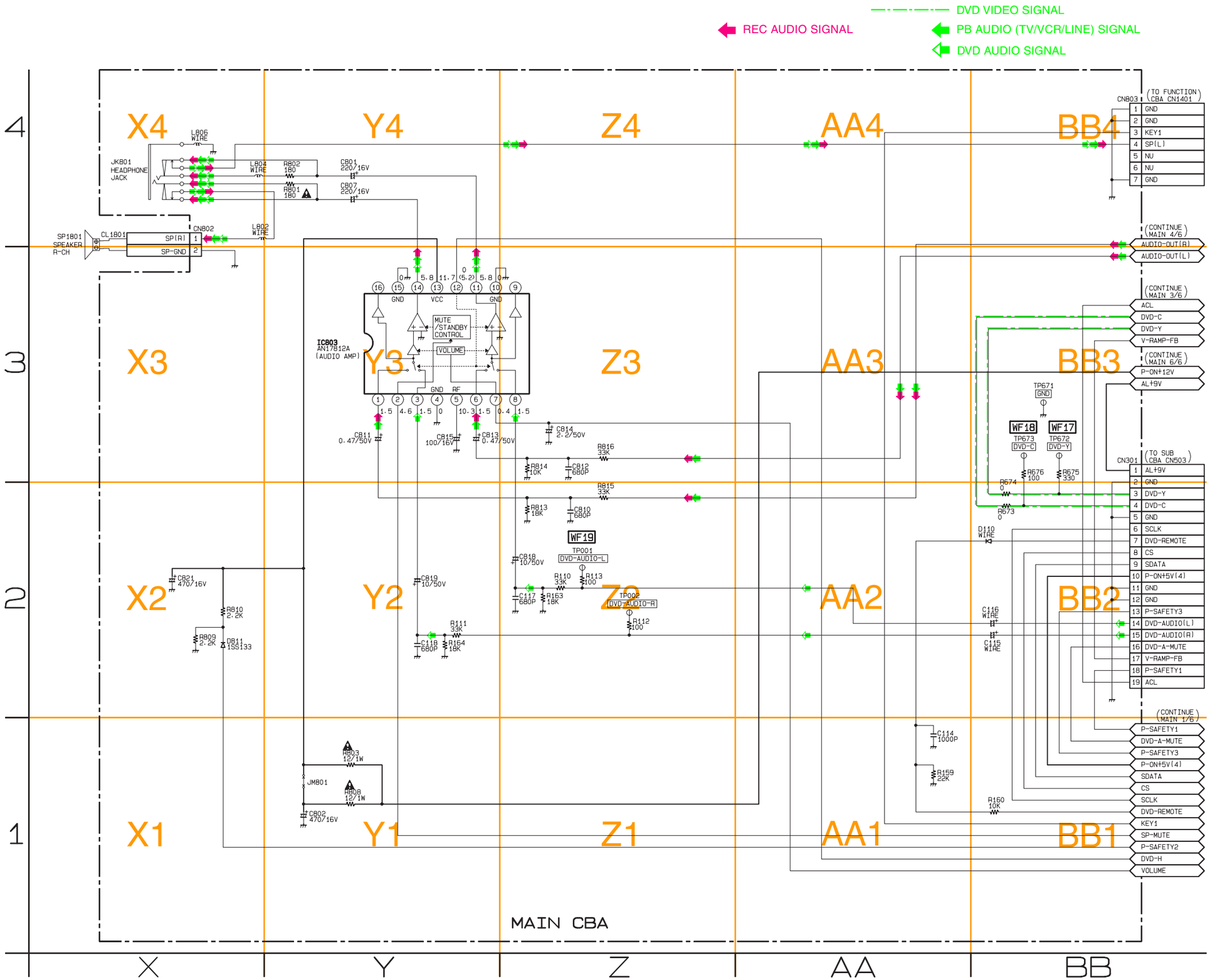
Main 4/6 Schematic Diagram < TV/VCR Section >



MAIN 4/6

Ref No.	Position
IC	
IC701	T-2
TRANSISTOR	
Q701	W-2
TEST POINTS	
TP701	S-2
TP702	S-2
TP703	T-1

Main 5/6 Schematic Diagram ＜TV/VCR Section＞



MAIN 5/6

Ref No.	Position
IC	
IC803	Y-3
CONNECTORS	
CN301	BB-3
CN802	X-4
CN803	BB-4
TEST POINTS	
TP001	Z-2
TP002	Z-2
TP671	BB-3
TP672	BB-3
TP673	BB-3

Main 6/6 Schematic Diagram < TV/VCR Section >

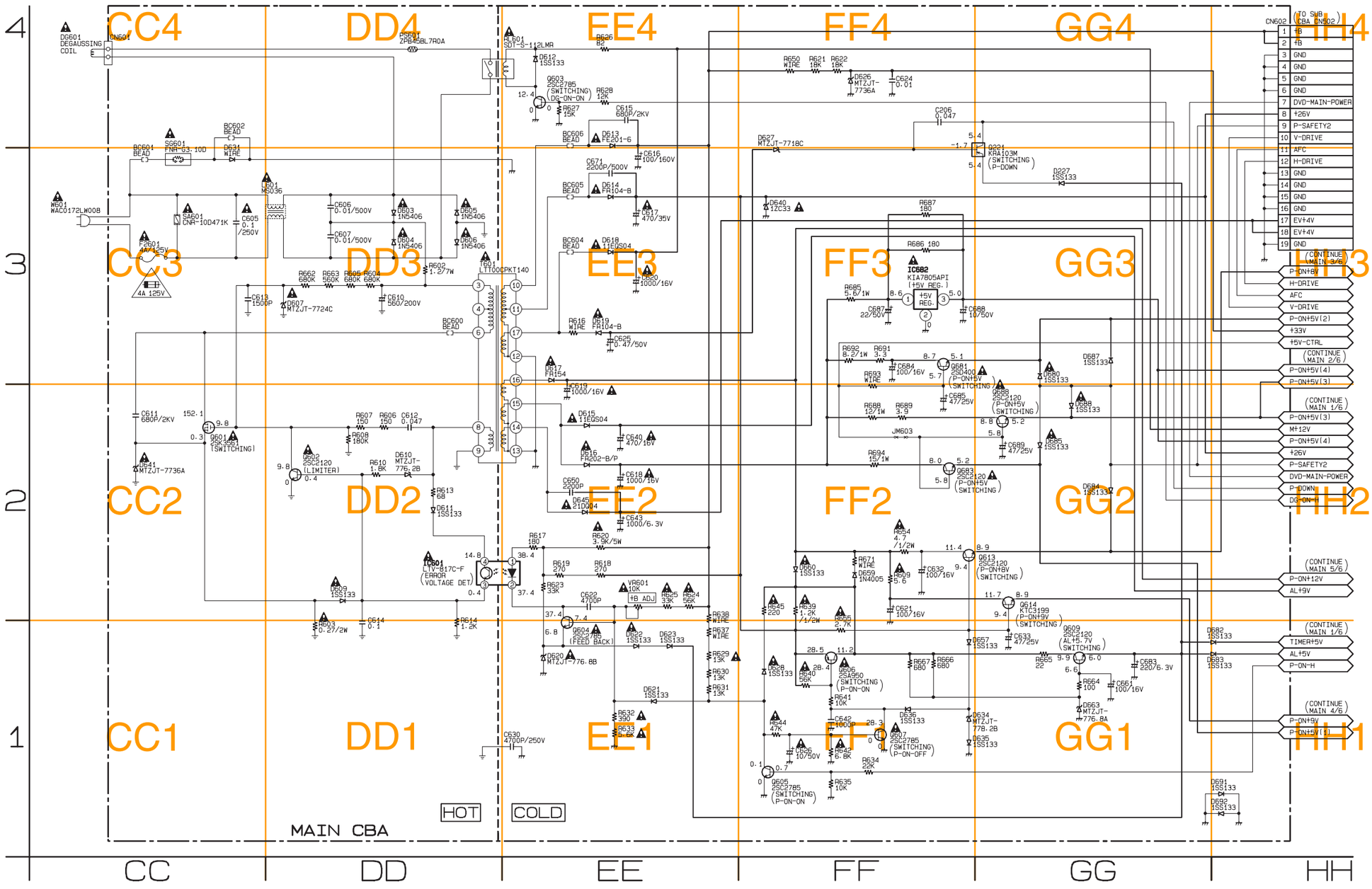
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F2601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

VOLTAGE CHART (Power off mode)

Ref. No.	1	2	3	4
IC601	12.0	10.9	0.3	1.6
Ref. No.	1	2	3	
IC682	3.1	0	1.9	
Ref. No.	S	D	G	
Q601	0	164.2	1.8	
Ref. No.	E	C	B	
Q221	5.3	5.3	3.5	
Q602	0	1.8	0.3	
Q604	6.8	10.9	7.4	
Q605	0	8.0	0	
Q606	9.2	9.2	8.6	
Q607	0	0.1	0.7	
Q609	5.9	8.2	6.5	
Q613	0.8	8.1	1.4	
Q614	0.9	8.1	1.4	
Q681	0.4	3.2	0.9	
Q683	0.8	3.2	0.9	
Q688	0.3	3.2	0.9	



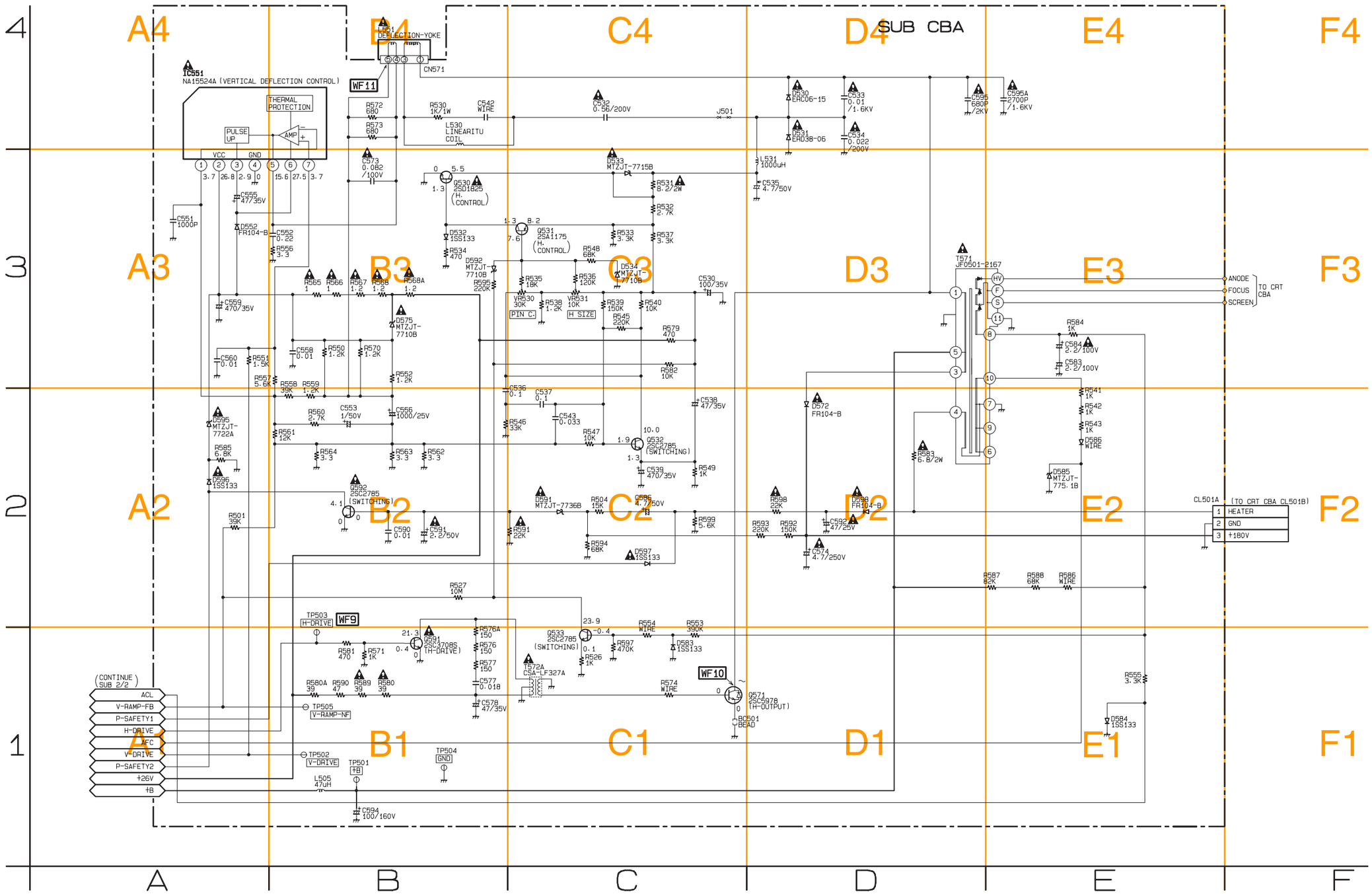
MAIN 6/6

Ref No.	Position
ICS	
IC601	DD-2
IC682	FF-3
TRANSISTORS	
Q221	GG-3
Q601	CC-2
Q602	DD-2
Q603	EE-4
Q604	EE-1
Q605	FF-1
Q606	FF-1
Q607	FF-1
Q609	GG-1
Q613	GG-2
Q614	GG-2
Q681	FF-3
Q683	FF-2
Q688	GG-2
CONNECTORS	
CN601	CC-4
CN602	HH-4
VARIABLE RESISTOR	
VR601	EE-2

Sub 1/2 Schematic Diagram < TV/VCR Section >

SUB 1/2

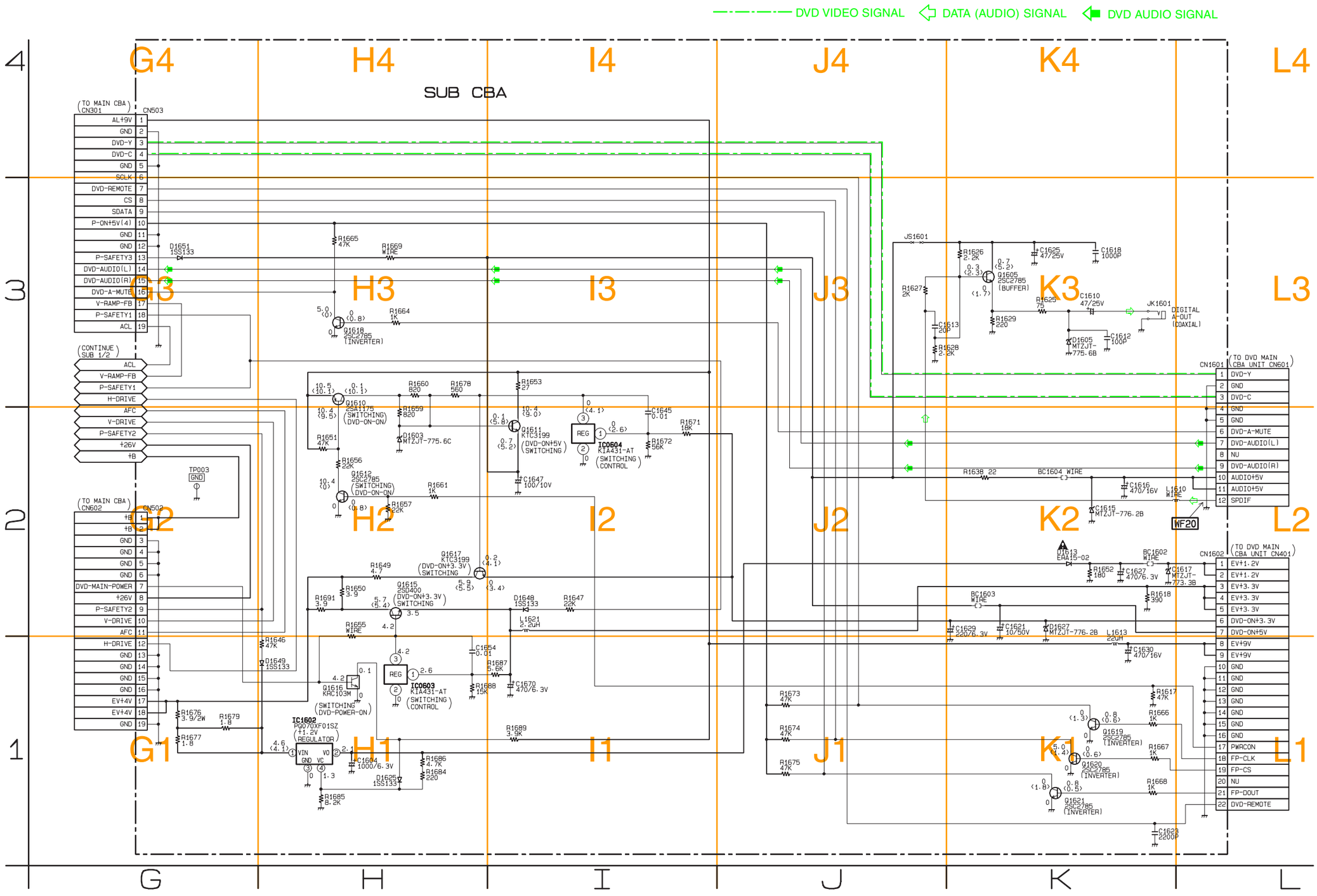
Ref No.	Position
IC	
IC551	A-4
TRANSISTORS	
Q530	B-3
Q531	C-3
Q532	C-2
Q533	C-1
Q571	D-1
Q591	B-1
Q592	B-2
CONNECTORS	
CL501A	E-2
CN571	B-4
TEST POINTS	
TP501	B-1
TP502	B-1
TP503	B-2
TP504	B-1
TP505	B-1
VARIABLE RESISTORS	
VR530	C-3
VR531	C-3



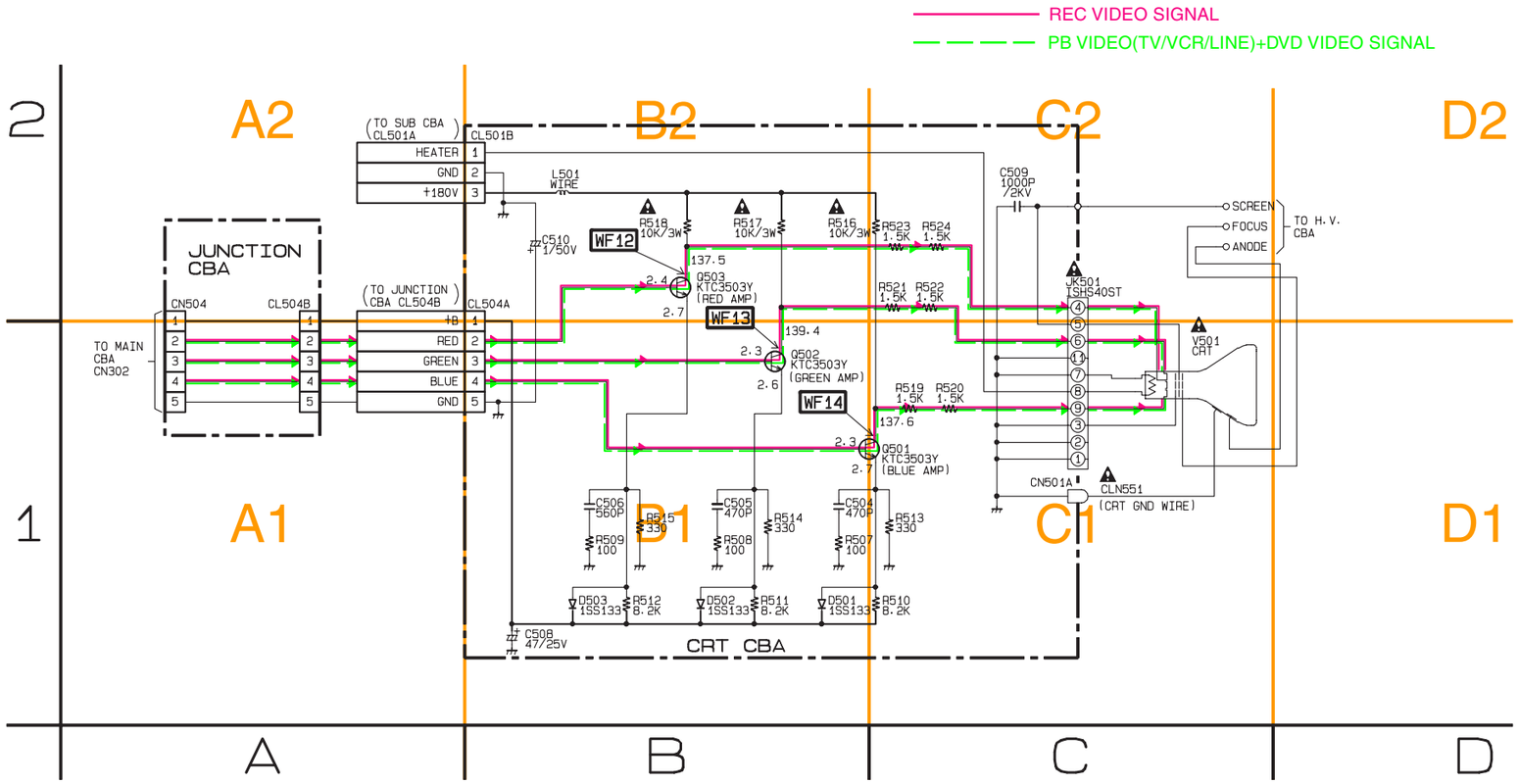
Sub 2/2 Schematic Diagram < TV/VCR Section >

SUB 2/2

Ref No.	Position
ICS	
IC0603	H-1
IC0604	I-2
IC1602	H-1
TRANSISTORS	
Q1605	K-3
Q1610	H-3
Q1611	I-2
Q1612	H-2
Q1615	H-2
Q1616	H-1
Q1617	H-2
Q1618	H-3
Q1619	K-1
Q1620	K-1
Q1621	K-1
CONNECTORS	
CN502	G-2
CN503	G-4
CN1601	L-3
CN1602	L-2
TEST POINT	
TP003	G-2



CRT Schematic Diagram < TV/VCR Section >

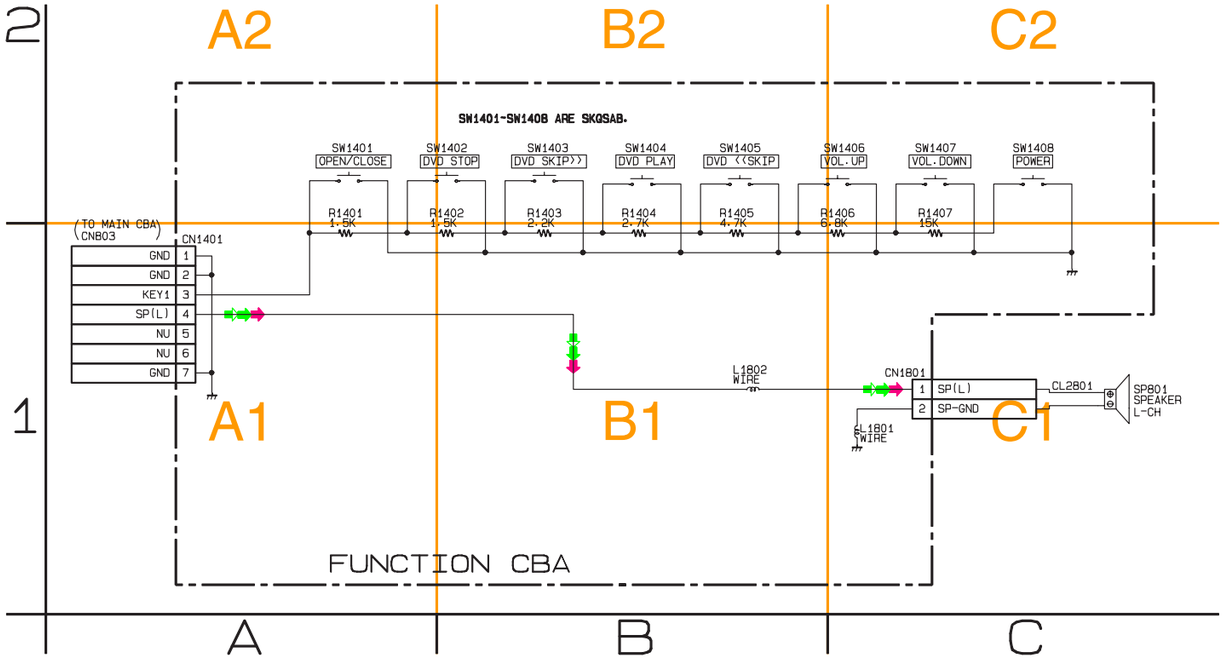


CRT

Ref No.	Position
TRANSISTORS	
Q501	C-1
Q502	B-2
Q503	B-2
CONNECTORS	
CL501B	B-2
CL504A	B-2
CN501A	C-1

Function Schematic Diagram < TV/VCR Section >

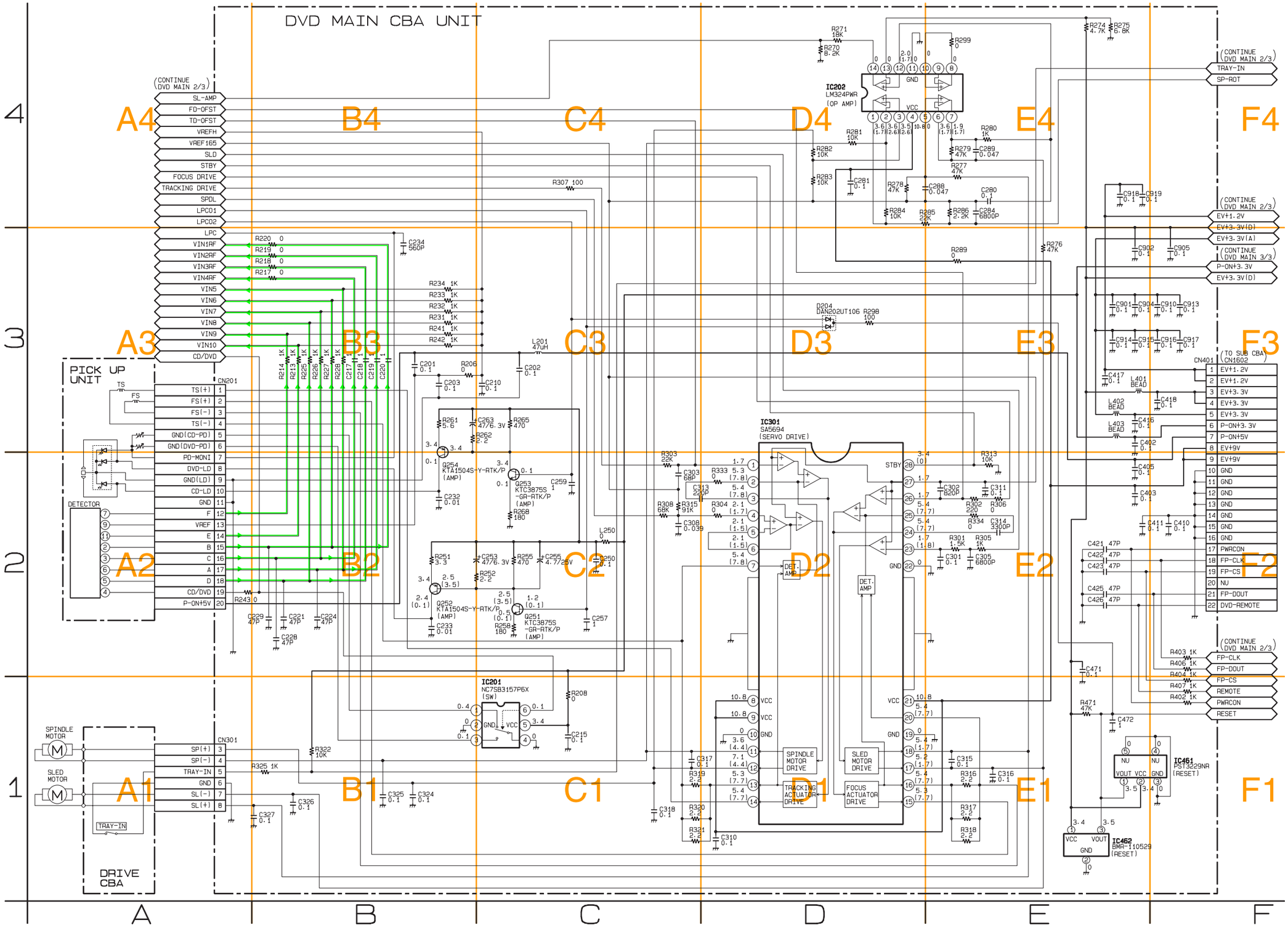
T6001SCCRT



T6001SCF

DVD Main 1/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO) SIGNAL



DVD MAIN 1/3

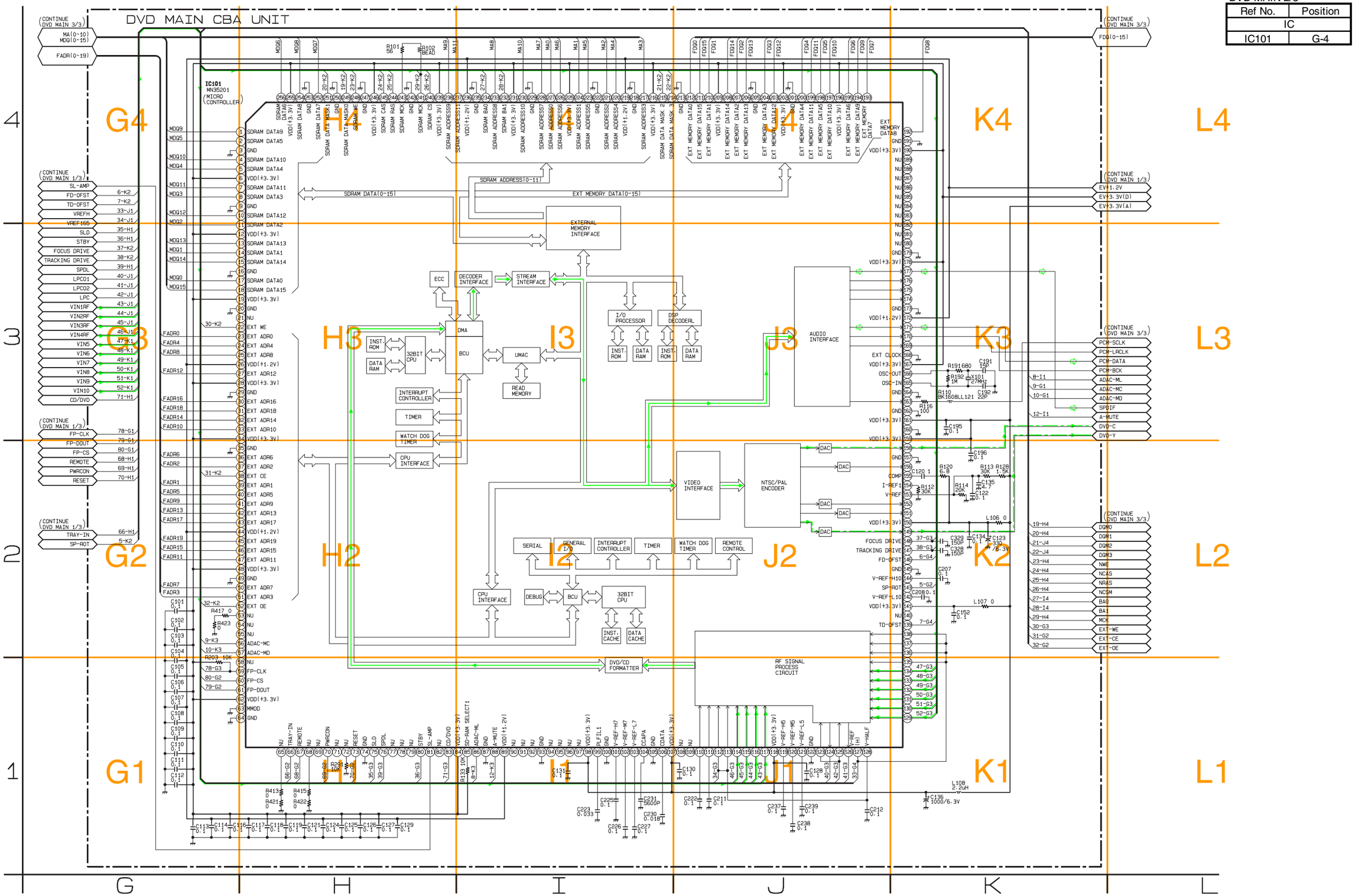
Ref No.	Position
ICS	
IC201	C-1
IC202	D-4
IC301	D-3
IC461	F-1
IC462	E-1
TRANSISTORS	
Q251	C-2
Q252	B-2
Q253	C-2
Q254	B-2
CONNECTORS	
CN201	A-3
CN301	A-1
CN401	F-3

DVD Main 2/3 Schematic Diagram < DVD Section >

DATA(VIDEO+AUDIO) SIGNAL
DATA (AUDIO) SIGNAL
DVD VIDEO SIGNAL

DVD MAIN 2/3

Ref No.	Position
IC	
IC101	G-4



IC101 VOLTAGE CHART

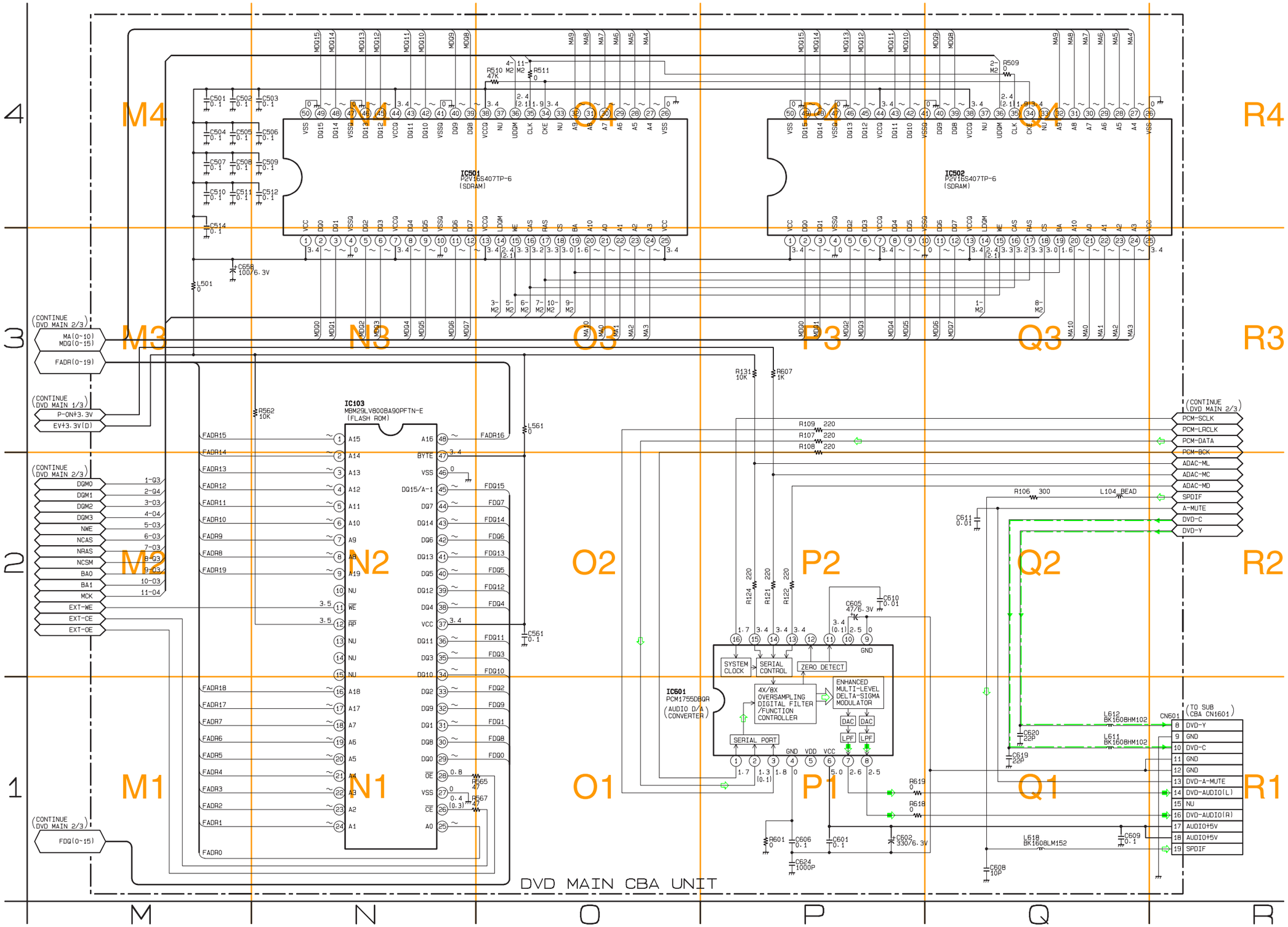
PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP	PIN.NO	PLAY	STOP
1	~	~	33	~	~	65	0	0	97	-----	-----	129	2.3	2.3	161	3.4	3.4	193	~	~	225	3.4	3.4
2	~	~	34	3.4	3.4	66	3.4	3.5	98	3.4	3.4	130	2.3	2.3	162	0	0	194	~	~	226	~	~
3	0	0	35	0	0	67	3.2	3.2	99	0.9	0.8	131	2.3	2.3	163	1.8	1.8	195	~	~	227	~	~
4	~	~	36	~	~	68	0	0	100	0	0	132	2.4	2.3	164	0	0	196	3.4	3.4	228	~	~
5	~	~	37	~	~	69	-----	-----	101	2.4	2.4	133	2.4	2.4	165	1.7	1.8	197	~	~	229	0	0
6	3.4	3.4	38	0.4	0.3	70	3.4	3.4	102	2.2	2.2	134	2.4	2.4	166	1.7	1.7	198	~	~	230	~	~
7	~	~	39	~	~	71	-----	-----	103	1.9	1.9	135	2.3	2.3	167	3.4	3.4	199	~	~	231	3.4	3.4
8	~	~	40	~	~	72	1.4	2.7	104	0.4	0.3	136	2.3	2.3	168	0	0	200	~	~	232	1.3	1.6
9	0	0	41	~	~	73	3.4	3.4	105	0	0	137	2.3	2.3	169	1.8	1.8	201	0	0	233	~	~
10	~	~	42	~	~	74	0	0	106	1.7	1.7	138	2.3	2.3	170	1.7	1.7	202	3.4	3.4	234	1.9	2.3
11	~	~	43	~	~	75	1.7	1.8	107	3.4	3.4	139	1.7	1.7	171	1.3	0.1	203	~	~	235	0	0
12	3.4	3.4	44	1.3	1.3	76	2.3	1.8	108	-----	-----	140	-----	-----	172	1.3	1.3	204	~	~	236	1.3	1.3
13	~	~	45	~	~	77	-----	-----	109	-----	-----	141	3.4	3.4	173	0	0	205	0	0	237	~	~
14	~	~	46	~	~	78	-----	-----	110	1.9	1.9	142	1.3	1.3	174	-----	-----	206	~	~	238	~	~
15	~	~	47	~	~	79	-----	-----	111	1.9	1.9	143	2.1	1.7	175	-----	-----	207	~	~	239	3.4	3.4
16	0	0	48	3.4	3.4	80	3.4	0.1	112	1.7	1.7	144	2.2	2.2	176	-----	-----	208	~	~	240	3.4	3.3
17	~	~	49	0	0	81	0.1	0.1	113	1.7	1.7	145	0	0	177	1.8	1.7	209	3.4	3.4	241	1.9	1.9
18	~	~	50	~	~	82	-----	-----	114	1.7	1.7	146	1.7	1.7	178	3.4	3.5	210	~	~	242	0	0
19	3.4	3.4	51	~	~	83	0.1	0.1	115	1.7	1.7	147	1.8	1.7	179	0	0	211	~	~	243	1.9	1.9
20	0	0	52	0.8	0.8	84	3.4	3.4	116	1.7	1.7	148	1.7	1.7	180	-----	-----	212	~	~	244	3.4	3.3
21	-----	-----	53	0	0	85	0.1	0.1	117	1.7	1.7	149	0.6	0.5	181	-----	-----	213	0	0	245	3.4	3.4
22	3.5	3.5	54	-----	-----	86	3.6	3.4	118	3.4	3.4	150	3.4	3.4	182	-----	-----	214	2.5	3.0	246	3.4	3.4
23	~	~	55	-----	-----	87	0	0	119	2.0	2.0	151	-----	-----	183	-----	-----	215	2.5	3.0	247	0	0
24	~	~	56	3.4	3.4	88	3.5	0.1	120	1.7	1.7	152	-----	-----	184	-----	-----	216	3.4	3.4	248	3.3	3.4
25	~	~	57	3.5	3.5	89	1.3	1.3	121	1.5	1.5	153	1.4	1.3	185	-----	-----	217	~	~	249	3.2	3
26	1.3	1.3	58	-----	-----	90	-----	-----	122	0	0	154	1.4	1.3	186	-----	-----	218	0	0	250	0	0
27	~	~	59	3.4	3.4	91	-----	-----	123	0.3	0.1	155	2.4	2.4	187	-----	-----	219	1.3	1.3	251	3.2	3.0
28	3.4	3.4	60	3.4	3.4	92	-----	-----	124	1.2	0.1	156	-----	-----	188	-----	-----	220	~	~	252	~	~
29	0	0	61	3.5	3.5	93	0	0	125	0.3	0.1	157	0	0	189	-----	-----	221	~	~	253	0	0
30	~	~	62	3.4	3.4	94	-----	-----	126	0.1	0.1	158	0.9	0.9	190	3.4	3.5	222	0	0	254	~	~
31	~	~	63	0	0	95	-----	-----	127	2.3	2.3	159	3.4	3.4	191	0	0	223	~	~	255	3.4	3.4
32	~	~	64	0	0	96	-----	-----	128	1.7	1.7	160	0	0	192	~	~	224	~	~	256	~	~

DVD Main 3/3 Schematic Diagram < DVD Section >

DVD VIDEO SIGNAL DATA (AUDIO) SIGNAL DVD AUDIO SIGNAL

DVD MAIN 3/3

Ref No.	Position
ICS	
IC103	N-3
IC501	N-4
IC502	Q-4
IC601	O-1
CONNECTOR	
CN601	R-1



Main CBA Top View < TV/VCR Section >

BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

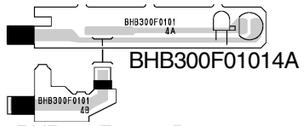
4A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

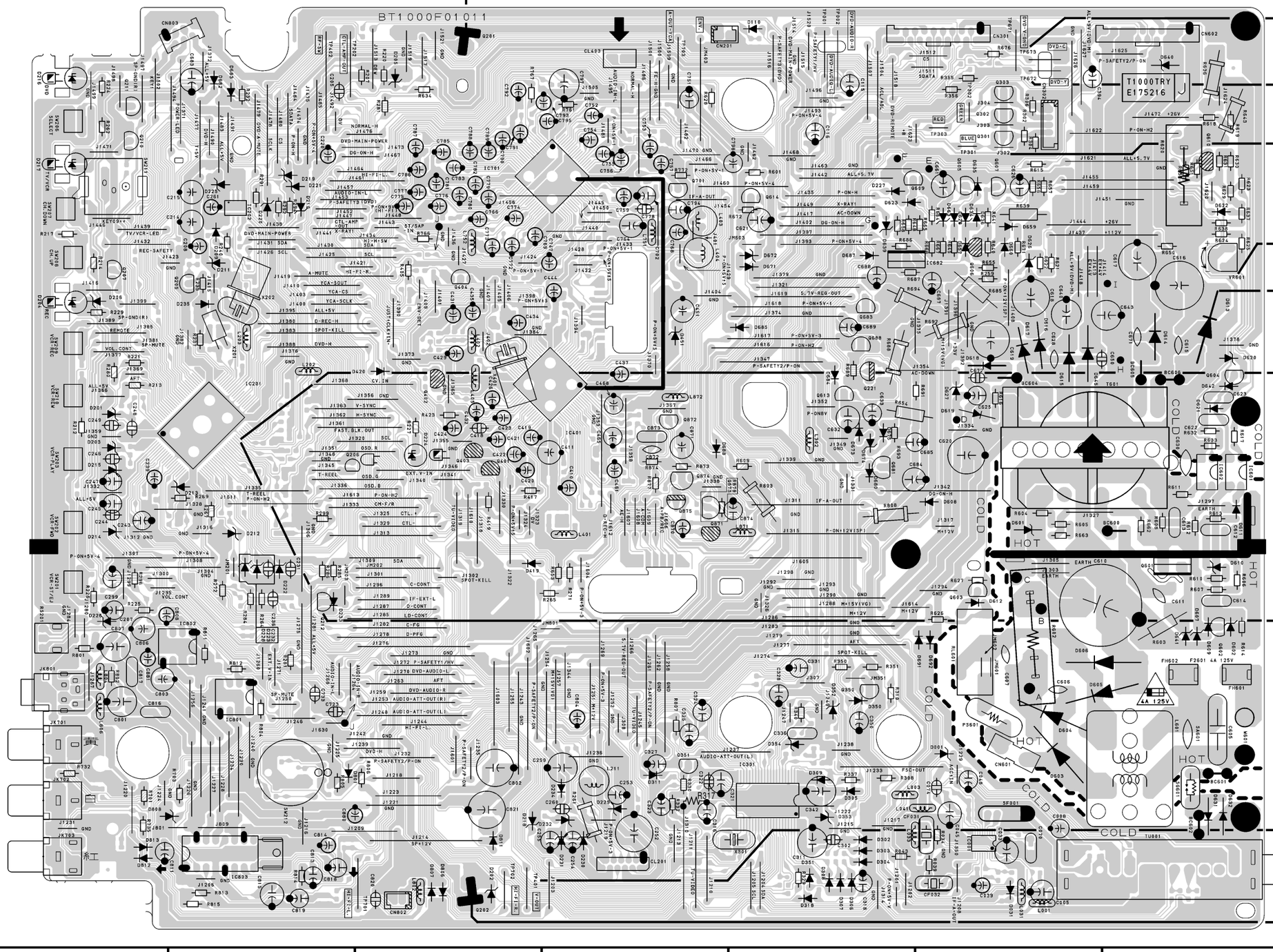
CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit.
If Main Fuse (F2601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply.
Otherwise it may cause some components in the power supply circuit to fail.

Sensor CBA Top View



BHB300F01014A

BHB300F01014B



MAIN CBA

Ref No.	Position
ICS	
IC001	F-1
IC201	B-4
IC202	B-4
IC301	E-1
IC401	D-3
IC601	G-3
IC682	E-4
IC701	C-5
IC803	B-1
TRANSISTORS	
Q205	B-4
Q206	B-3
Q207	A-4
Q210	A-5
Q211	A-5
Q221	E-4
Q350	E-2
Q351	D-2
Q401	C-3
Q402	C-3
Q403	C-3
Q404	C-4
Q601	G-3
Q602	G-2
Q603	F-2
Q604	G-4
Q605	F-5
Q606	F-4
Q607	F-5
Q609	F-5
Q613	E-3
Q614	E-5
Q681	E-3
Q683	E-4
Q688	E-4
Q701	D-5
Q871	D-3
Q872	D-3
Q873	E-3
Q874	D-3
Q875	D-3
CONNECTORS	
CL201	D-1
CL401	D-4
CL402	D-2
CL403	D-5
CN301	F-5
CN302	F-5
CN601	F-1
CN602	G-5
CN802	C-1
CN803	B-5
TEST POINTS	
JM403	D-5
TP001	E-5
TP002	E-5
TP202	B-5
TP301	F-5
TP302	F-5
TP303	F-5
TP401	C-1
TP402	B-5
TP671	F-5
TP672	F-5
TP673	F-5
TP701	C-1
TP702	C-1
TP703	D-5
VARIABLE RESISTOR	
VR601	G-4

BT1000F01011

Main CBA Bottom View < TV/VCR Section >

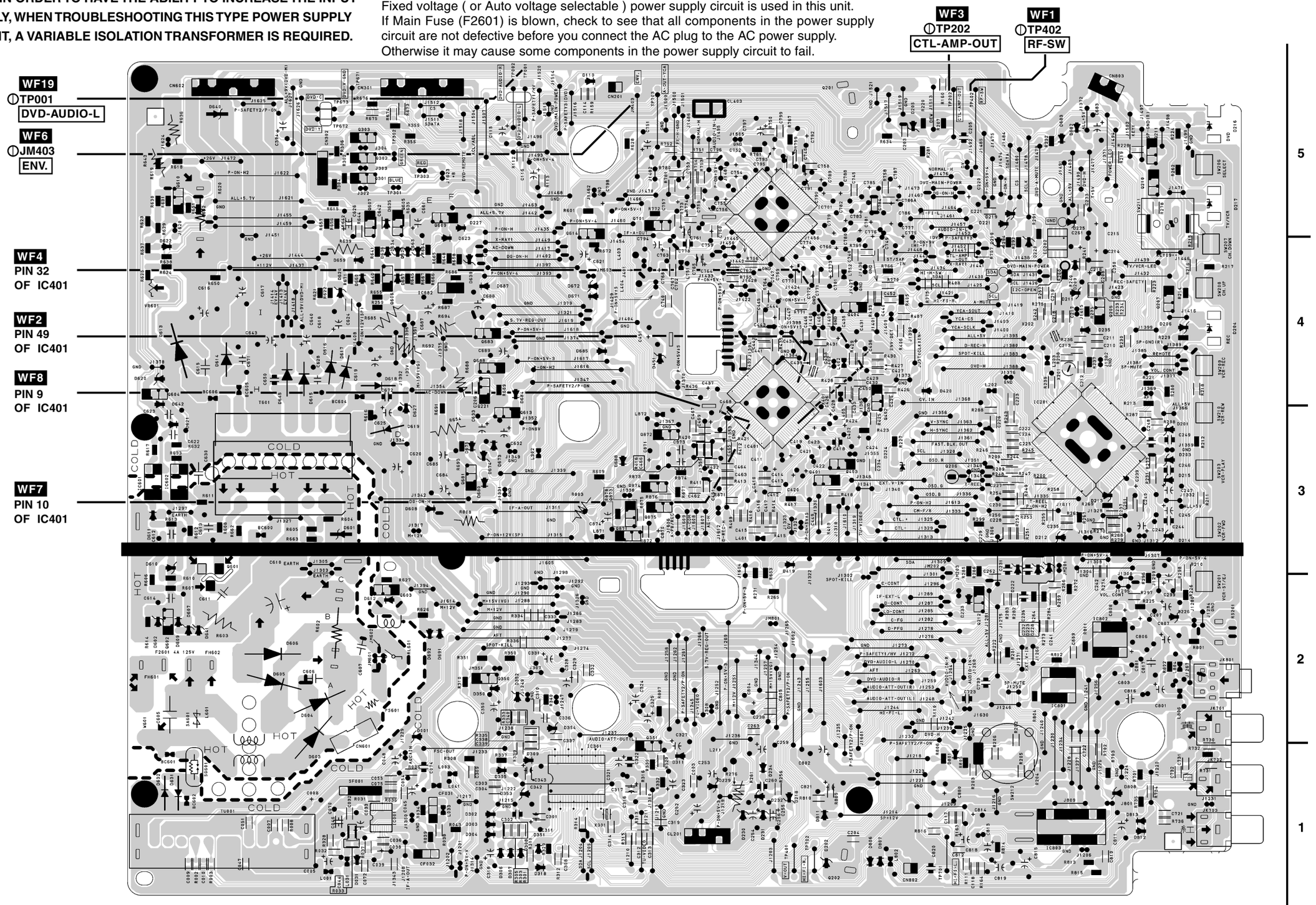
BECAUSE A HOT CHASSIS GROUND IS PRESENT IN THE POWER SUPPLY CIRCUIT, AN ISOLATION TRANSFORMER MUST BE USED. ALSO, IN ORDER TO HAVE THE ABILITY TO INCREASE THE INPUT SLOWLY, WHEN TROUBLESHOOTING THIS TYPE POWER SUPPLY CIRCUIT, A VARIABLE ISOLATION TRANSFORMER IS REQUIRED.

4A 125V

CAUTION: FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE 4A, 125V FUSE.
ATTENTION: UTILISER UN FUSIBLE DE RECHANGE DE MÊME TYPE DE 4A, 125V.

CAUTION !
Fixed voltage (or Auto voltage selectable) power supply circuit is used in this unit. If Main Fuse (F2601) is blown, check to see that all components in the power supply circuit are not defective before you connect the AC plug to the AC power supply. Otherwise it may cause some components in the power supply circuit to fail.

NOTE :
The voltage for parts in hot circuit is measured using hot GND as a common terminal.

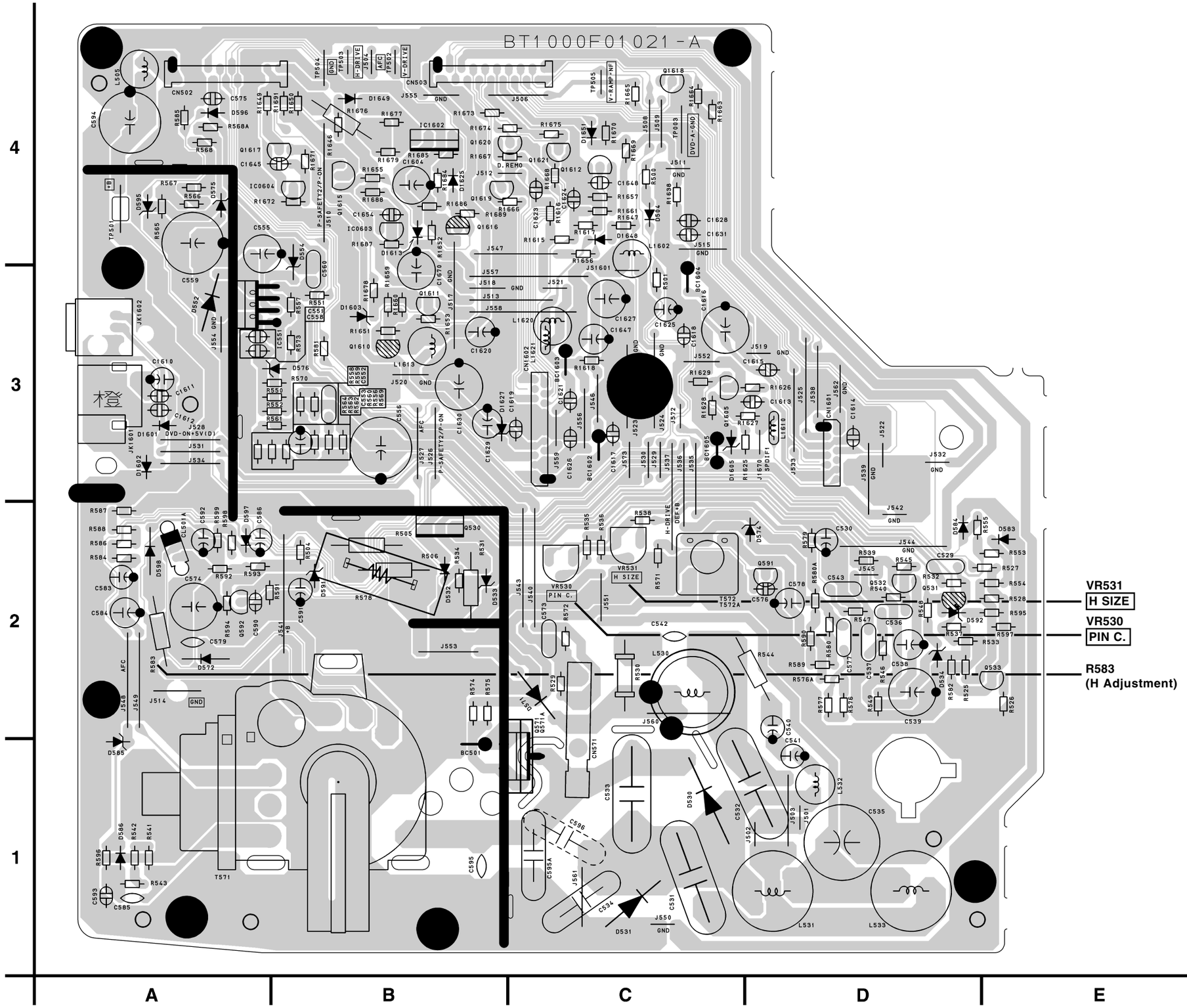


1-10-31

1-10-32

BT1000F01011

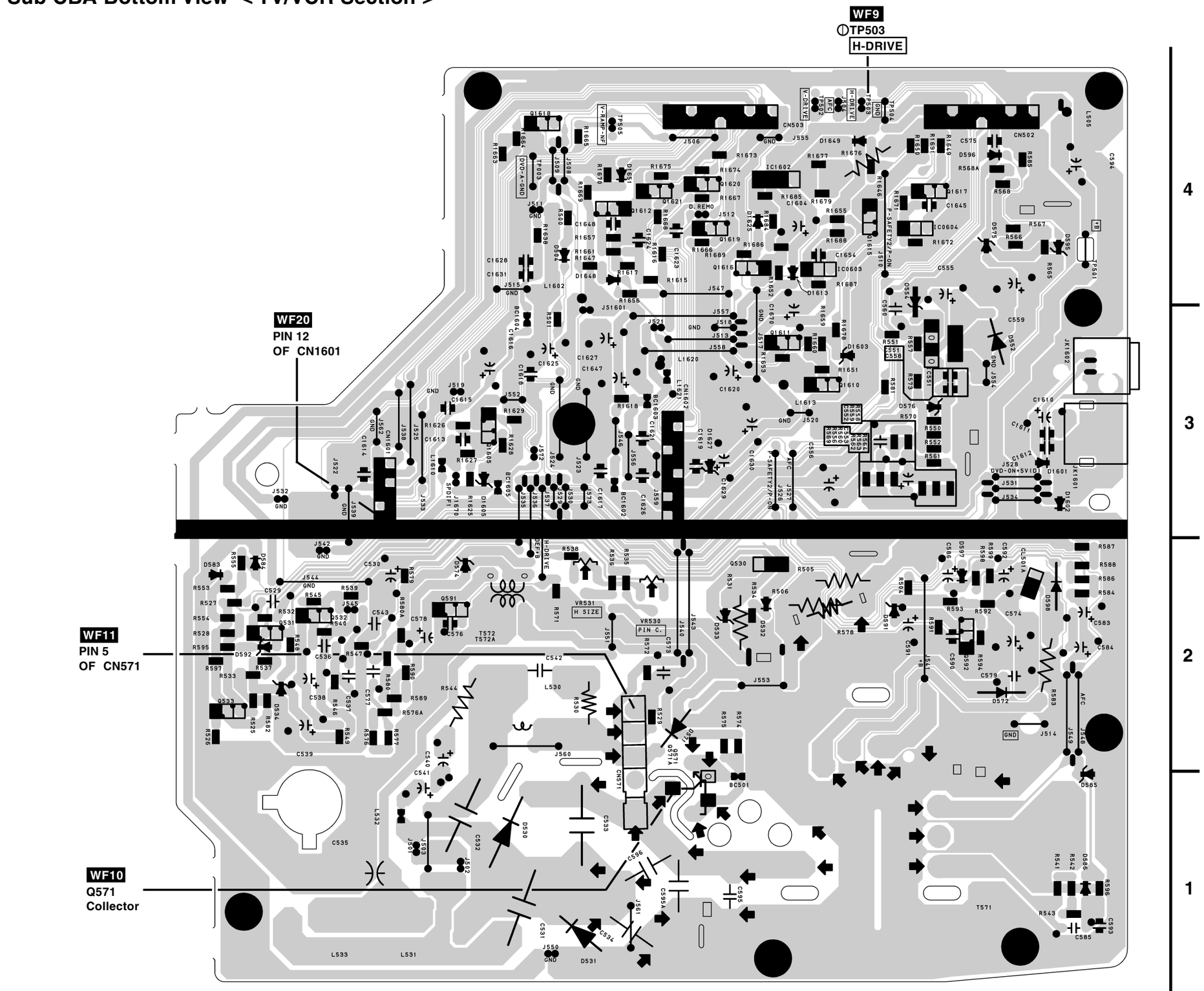
Sub CBA Top View < TV/VCR Section >



SUB CBA

Ref No.	Position
ICS	
IC551	B-3
IC0603	B-4
IC0604	A-4
IC1602	D-4
TRANSISTORS	
Q530	B-2
Q531	D-2
Q532	D-2
Q533	E-2
Q571	C-2
Q591	D-2
Q592	A-2
Q1605	C-3
Q1610	B-3
Q1611	B-3
Q1612	C-4
Q1615	B-4
Q1616	B-4
Q1617	A-4
Q1618	C-4
Q1619	B-4
Q1620	B-4
Q1621	C-4
CONNECTORS	
CL501A	A-2
CN502	A-4
CN503	B-4
CN571	C-1
CN1601	D-3
CN1602	C-3
TEST POINTS	
TP003	C-4
TP501	A-4
TP502	B-4
TP503	B-4
TP504	B-4
TP505	C-4
VARIABLE RESISTORS	
VR530	C-2
VR531	C-2

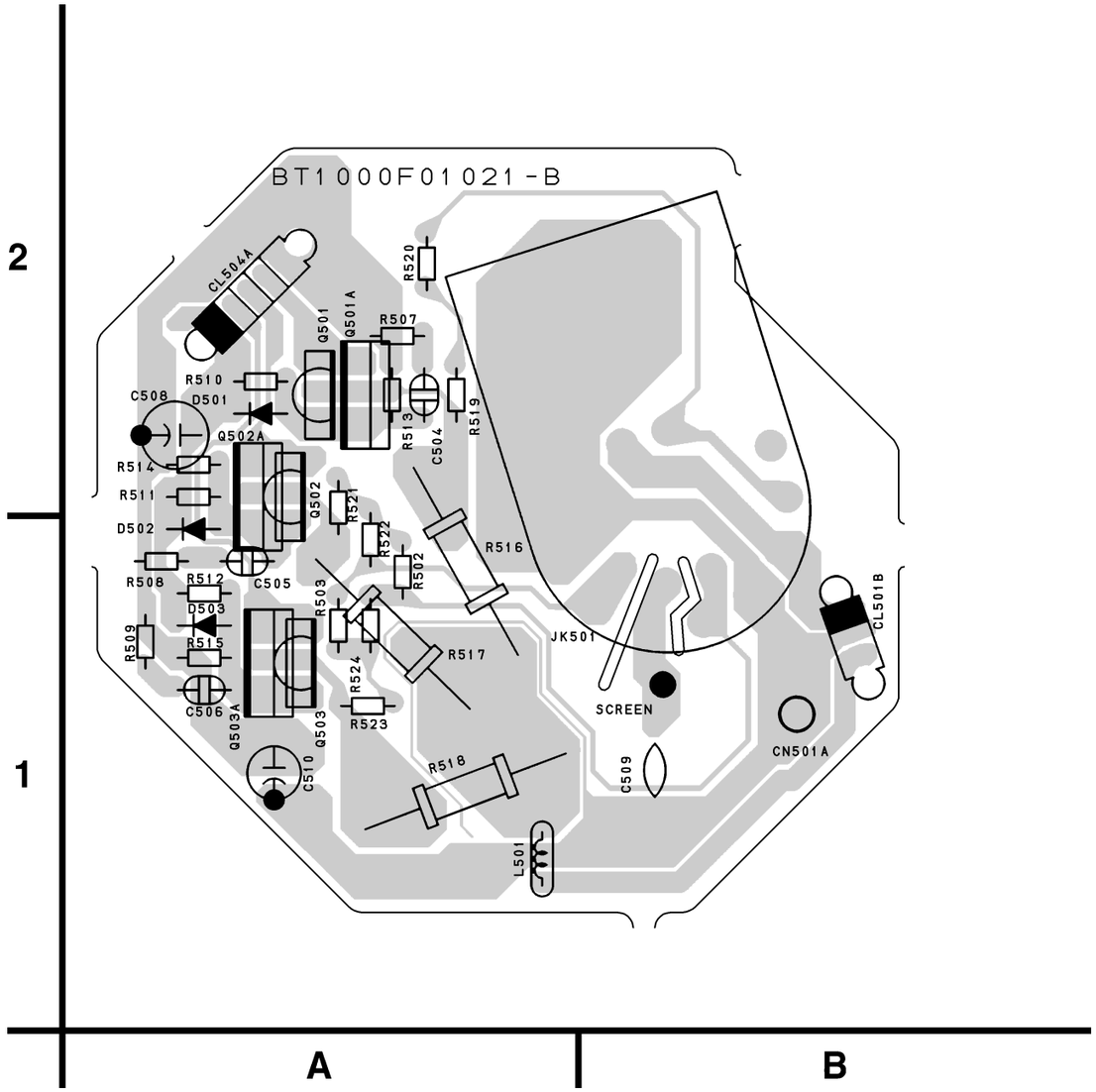
Sub CBA Bottom View < TV/VCR Section >



CRT CBA Top View < TV/VCR Section >

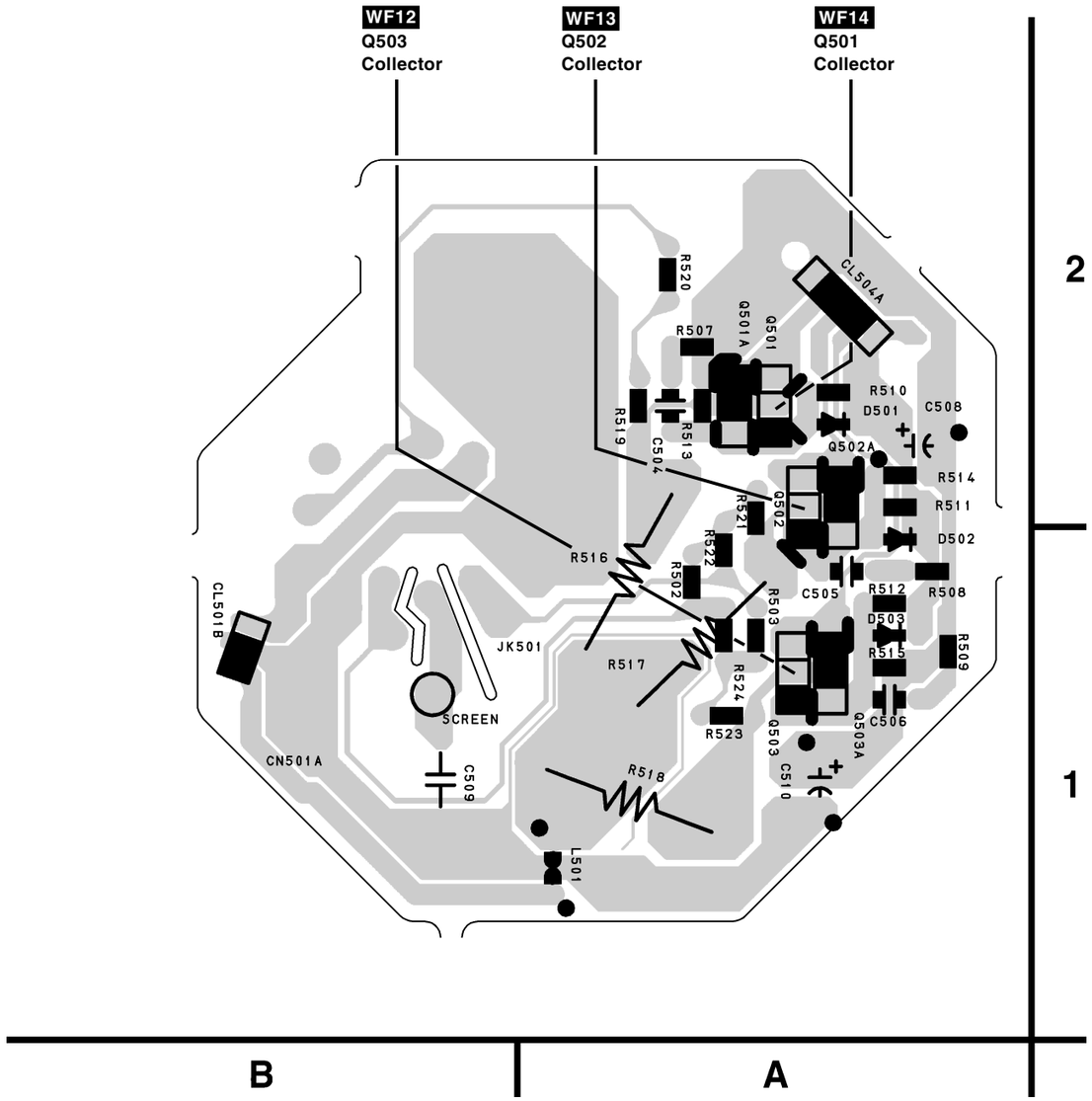
CRT CBA

Ref No.	Position
TRANSISTORS	
Q501	A-2
Q502	A-2
Q503	A-1
CONNECTORS	
CL501B	B-1
CL504A	A-2
CN501A	B-1



1-10-37

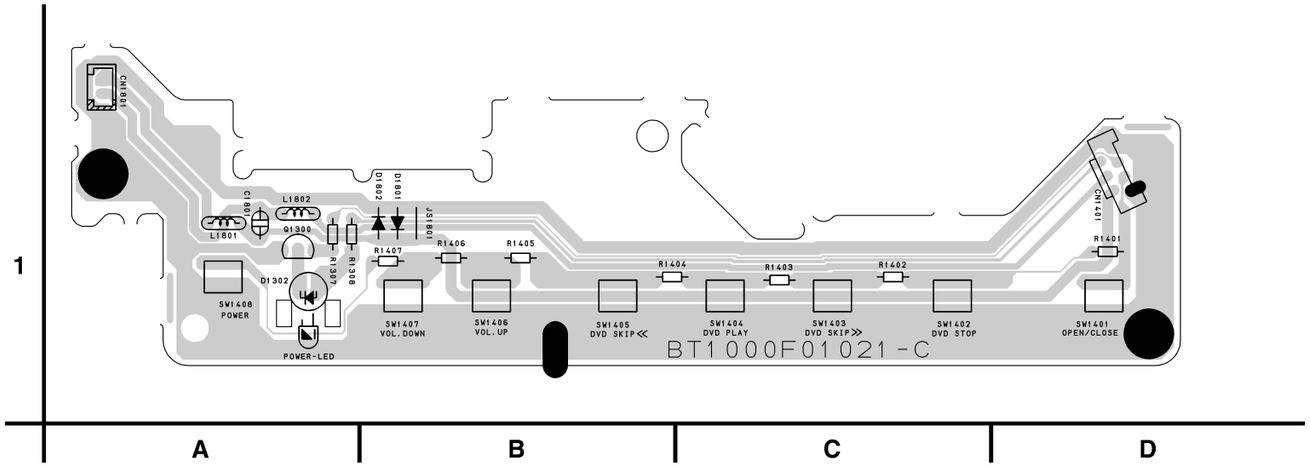
CRT CBA Bottom View < TV/VCR Section >



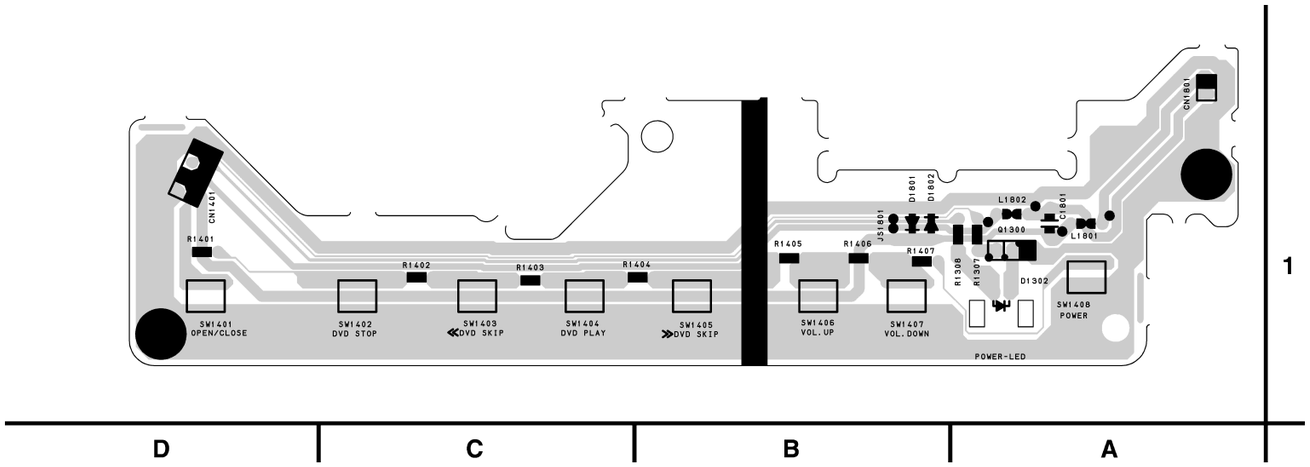
1-10-38

BT1000F01021-B

Function CBA Top View < TV/VCR Section >

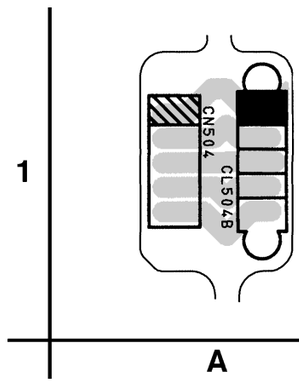


Function CBA Bottom View < TV/VCR Section >

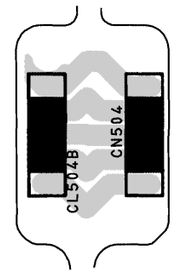


BT1000F01021-C

Junction CBA Top View



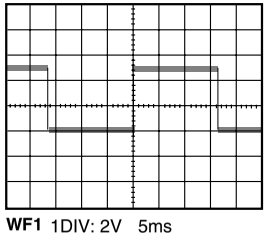
Junction CBA Bottom View



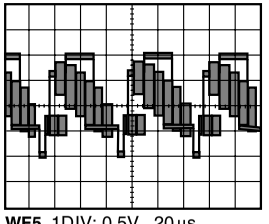
BT1000F01021

WAVEFORMS

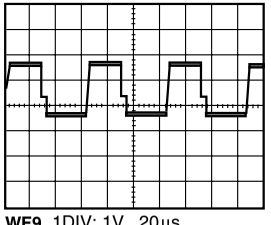
Input: NTSC Color Bar Signal (with 1kHz Audio Signal) --- WF1~WF16
DVD Video (Power on (Stop) MODE) --- WF17, WF18
CD (1KHz Play) --- WF19, WF20
INITIAL POSITION: Unplug unit from AC outlet for at least five minutes, reconnect to AC outlet and then turn power on.
(Brightness---Center Color---Center Tint --- Center Contrast---Approx 70%)



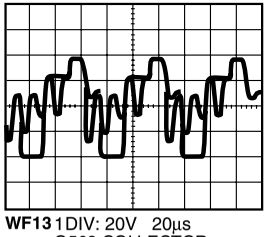
WF1 1DIV: 2V 5ms
TP402 RF-SW



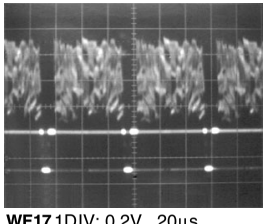
WF5 1DIV: 0.5V 20µs
TP401 V-OUT



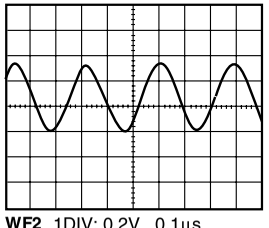
WF9 1DIV: 1V 20µs
TP503 H-DRIVE



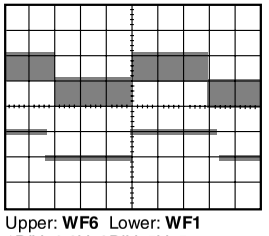
WF13 1DIV: 20V 20µs
Q502 COLLECTOR



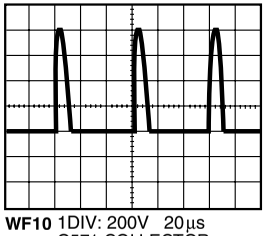
WF17 1DIV: 0.2V 20µs
TP672 DVD-Y



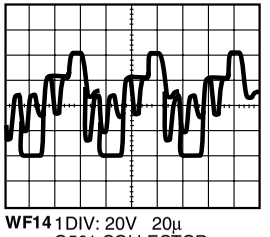
WF2 1DIV: 0.2V 0.1µs
IC401 Pin 49



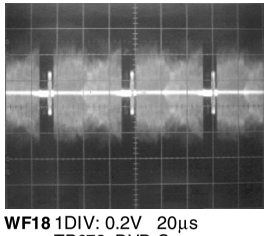
Upper: **WF6** Lower: **WF1**
1DIV: 0.2V 2DIV: 5V 5ms
JM403 ENV.



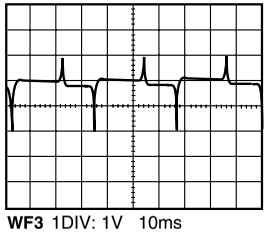
WF10 1DIV: 200V 20µs
Q571 COLLECTOR



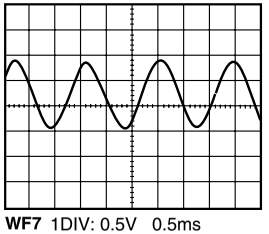
WF14 1DIV: 20V 20µ
Q501 COLLECTOR



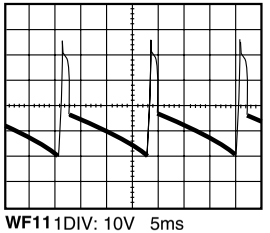
WF18 1DIV: 0.2V 20µs
TP673 DVD-C



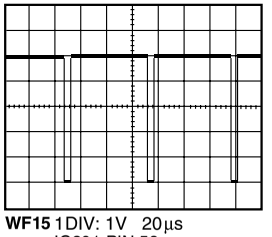
WF3 1DIV: 1V 10ms
TP202 CTL-AMP-OUT



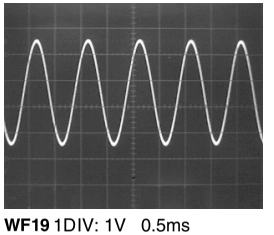
WF7 1DIV: 0.5V 0.5ms
IC401 PIN10



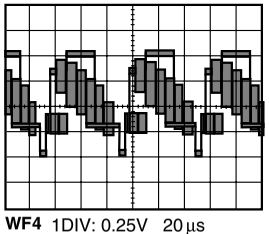
WF11 1DIV: 10V 5ms
CN571 PIN 5



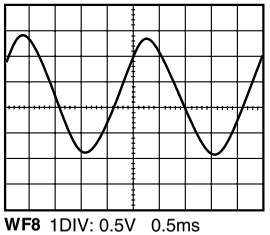
WF15 1DIV: 1V 20µs
IC201 PIN 58



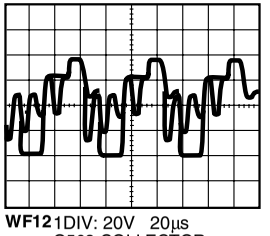
WF19 1DIV: 1V 0.5ms
TP001 DVD-AUDIO-L



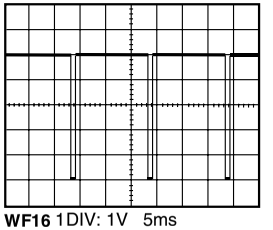
WF4 1DIV: 0.25V 20µs
IC401 Pin 32



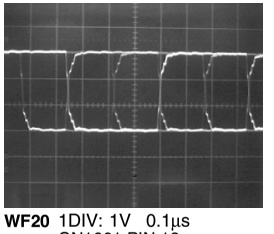
WF8 1DIV: 0.5V 0.5ms
IC401 PIN9



WF12 1DIV: 20V 20µs
Q503 COLLECTOR

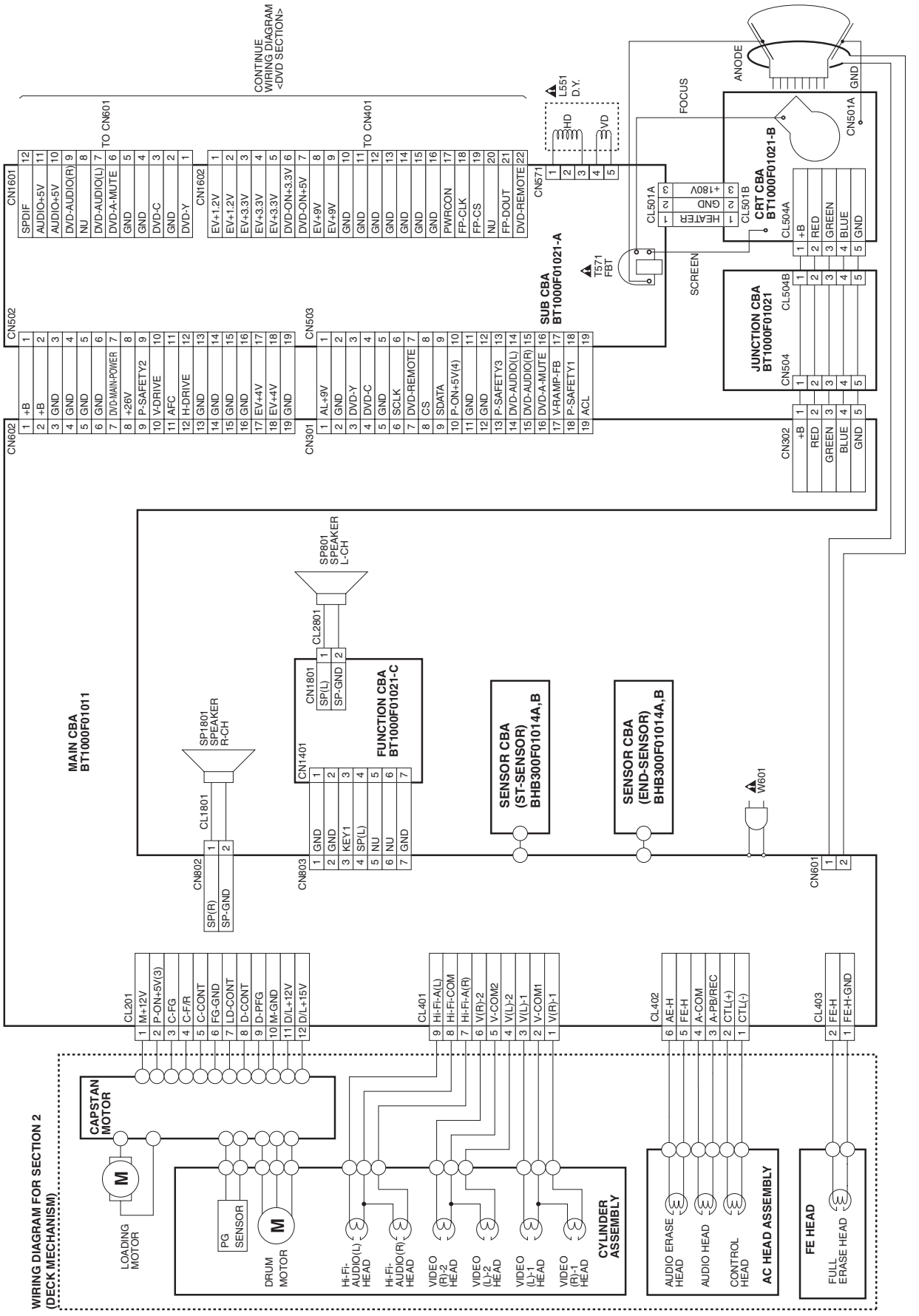


WF16 1DIV: 1V 5ms
IC201 PIN 59

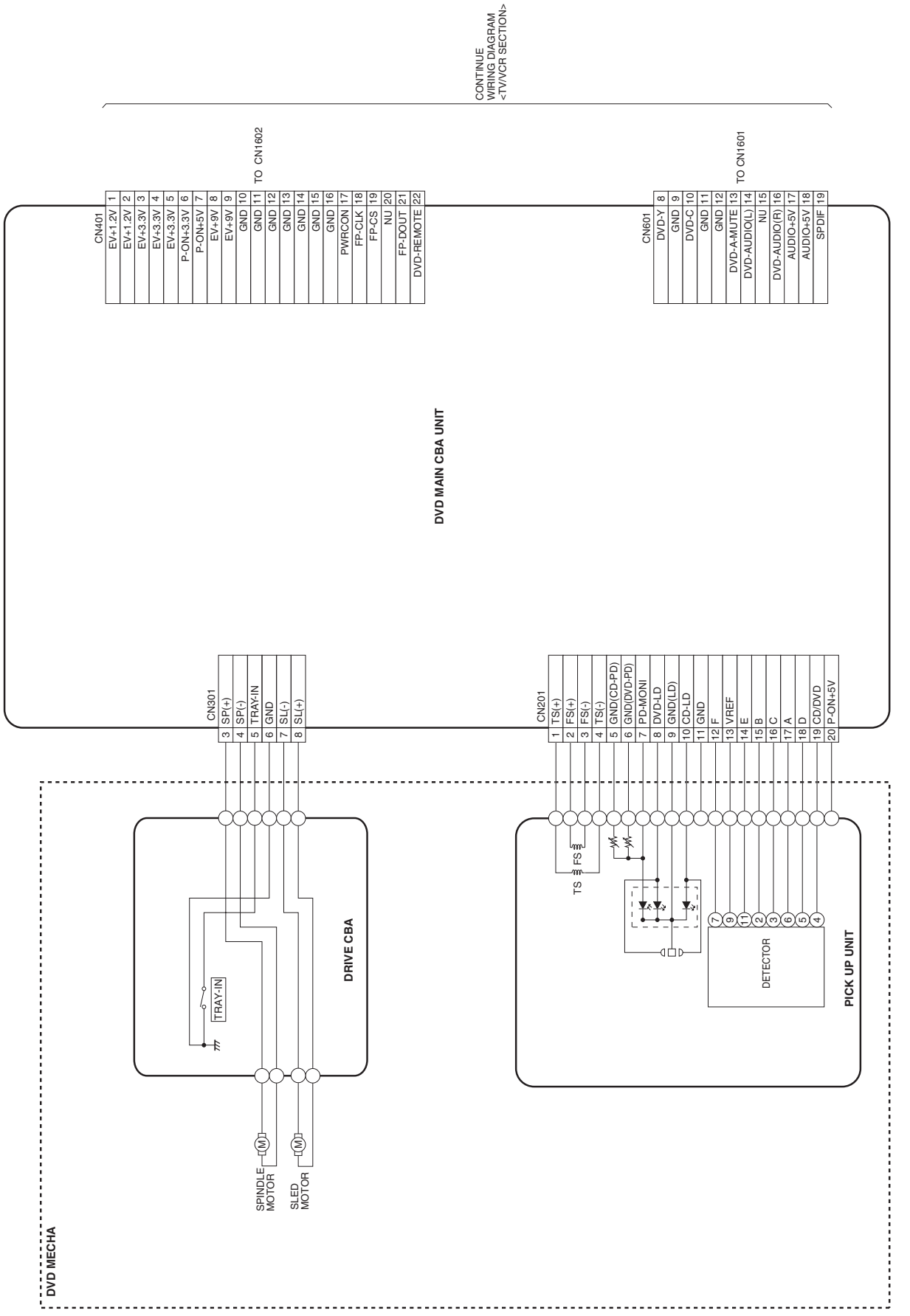


WF20 1DIV: 1V 0.1µs
CN1601 PIN 12

WIRING DIAGRAM < TV/VCR Section >



WIRING DIAGRAM < DVD Section >



SYSTEM CONTROL TIMING CHARTS

[VCD SECTION]

Mode SW : LD-SW

LD-SW Position detection A/D Input voltage Limit (Calculated voltage)	Symbol
3.76V~4.50V (4.12V)	EJ
4.51V~5.00V (5.00V)	CL
0.00V~0.25V (0.00V)	SB
1.06V~1.50V (1.21V)	TL
0.66V~1.05V (0.91V)	FB
1.99V~2.60V (2.17V)	SF
1.51V~1.98V (1.80V)	SM
3.20V~3.75V (3.40V)	AU
0.26V~0.65V (0.44V)	AL
4.51V~5.00V (5.00V)	SS
2.61V~3.19V (2.97V)	RS

Note:

Note:

EJ ⟶ RS: Loading FWD (LM-FWD/REV “H”)
RS ⟶ EJ: Loading REV (LM-FWD/REV “L”)
Stop (A) = Loading
Stop (B) = Unloading

Note:

Symbol	Loading Status
EJ	Eject
CL	Eject ~ REW Reel
SB	REW Reel ~ Stop(B)
TL	Stop(B) ~ Brake Cancel
FB	Brake Cancel ~ FF / REW
SF	FF / REW ~ Stop(M), (FF / REW)
SM	Stop(M), (FF / REW) ~ Stop(A)
AU	Stop(A) ~ Play / REC
AL	Play / REC ~ Still / Slow
SS	Still / Slow ~ RS (REW Search)
RS	RS (REW Search)

Chart 1

1) SP MODE

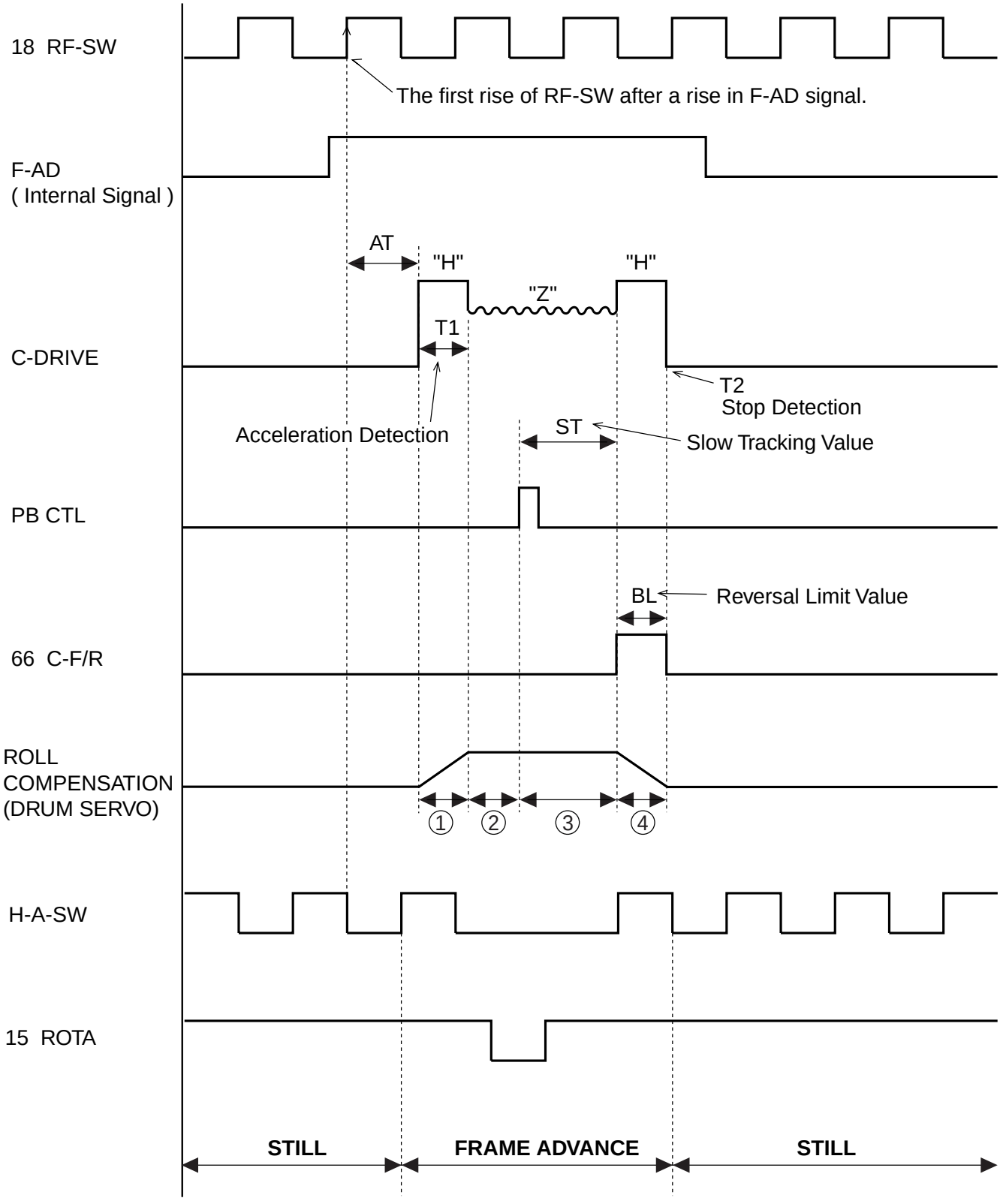


Chart 2

2) LP/EP MODE

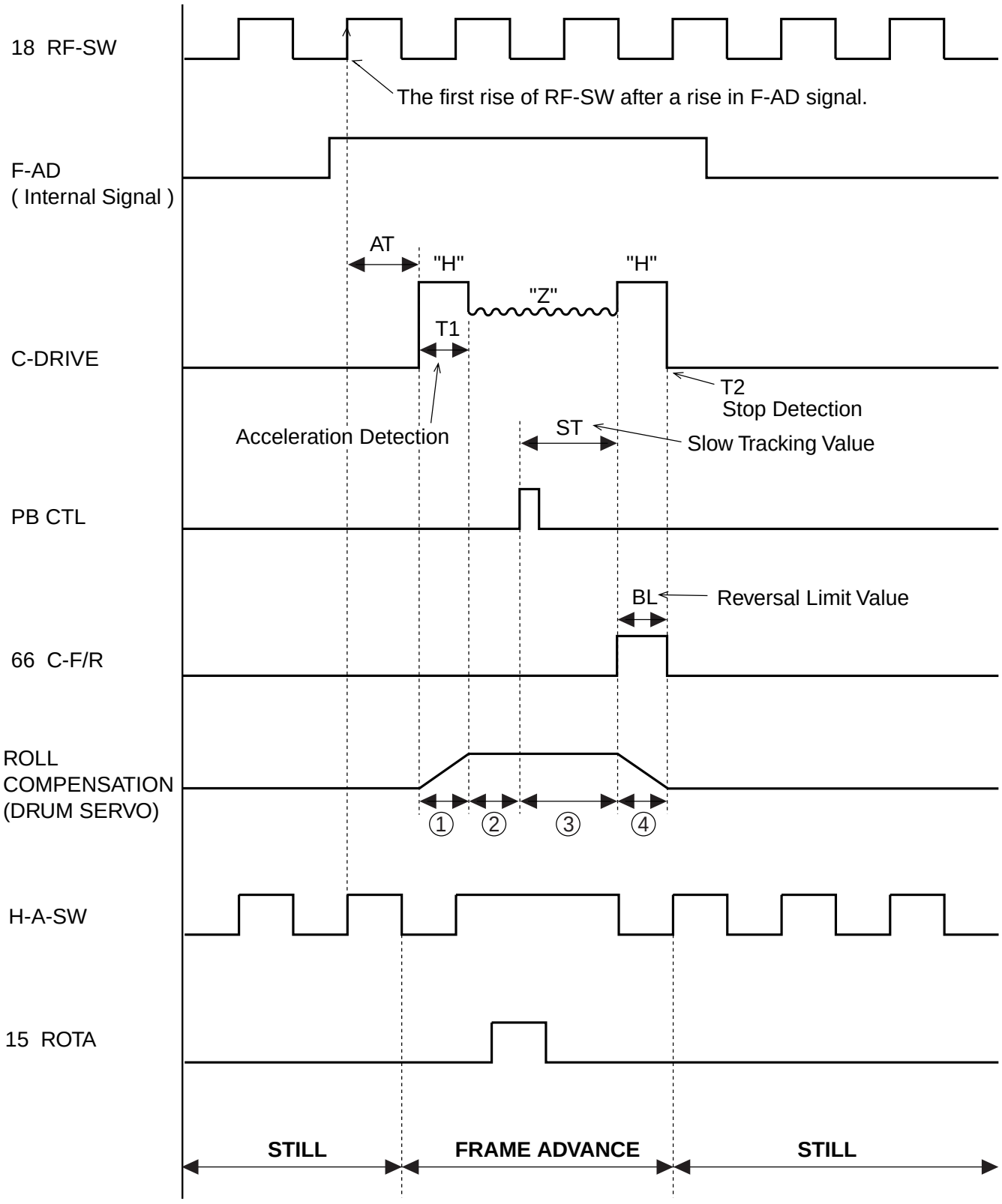


Chart 3

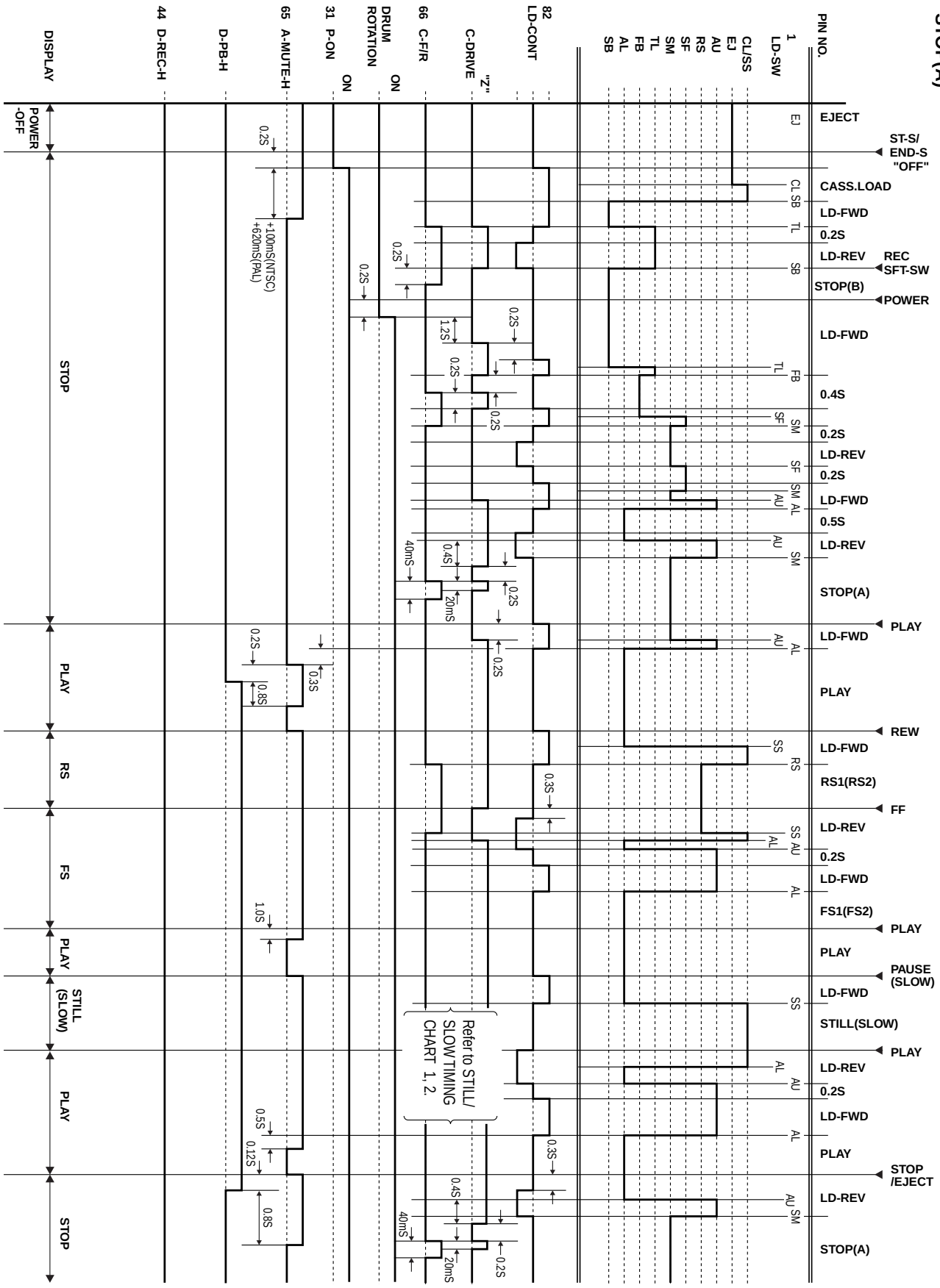
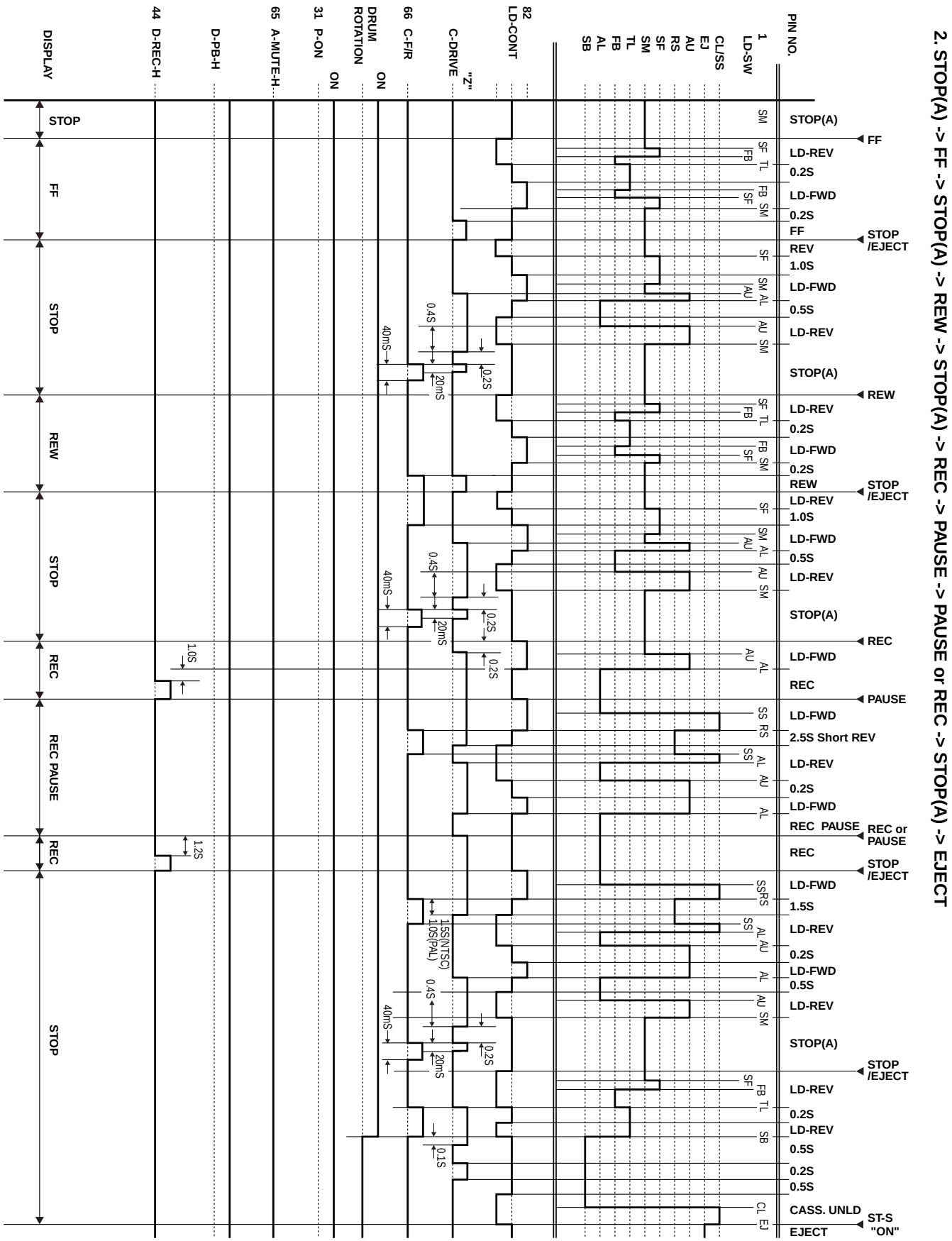
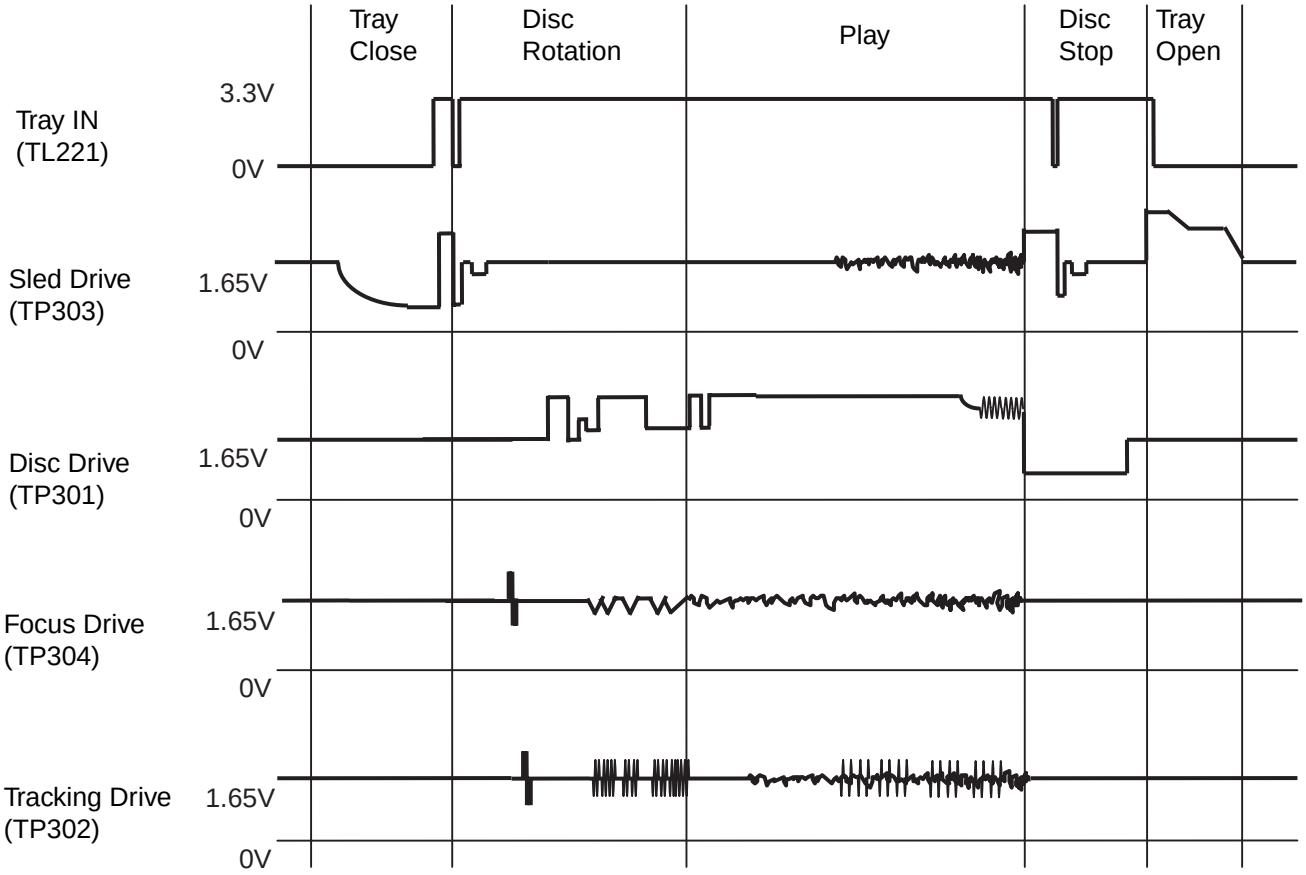

1. EJECT (POWER OFF) -> CASSETTE IN (POWER ON) -> STOP(B) -> STOP(A) -> PLAY -> RS -> FS -> PLAY -> STILL/SLOW -> PLAY -> STOP(A)
PIN NO.
1 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
82 LD-CONT
"Z" C-DRIVE
66 C-F/R
DRUM ROTATION
31 P-ON
65 A-MUTE-H
44 D-REC-H
D-PB-H
DISPLAY
EJECT
ST-S/ END-S "OFF"
CASS.LOAD
LD-FWD
0.2S
LD-REV
REC SFT-SW
STOP(B)
POWER
LD-FWD
0.4S
0.2S
LD-REV
0.2S
LD-FWD
0.5S
LD-REV
STOP(A)
PLAY
LD-FWD
PLAY
REW
LD-FWD
RS1(RS2)
FF
LD-REV
0.2S
LD-FWD
FS1(FS2)
PLAY
PLAY
PAUSE (SLOW)
LD-FWD
STILL(SLOW)
PLAY
LD-REV
0.2S
LD-FWD
PLAY
STOP /EJECT
LD-REV
STOP(A)
Refer to STILL/ SLOW TIMING CHART 1, 2.
POWER -OFF
STOP
PLAY
RS
FS
PLAY
STILL (SLOW)
PLAY
STOP
+100mS(NTSC) +620mS(PAL)
0.25
1.2S
40mS
20mS
0.8S
0.3S
1.0S
0.55
0.12S

Chart 4


2. STOP(A) -> FF -> STOP(A) -> REW -> STOP(A) -> REC -> PAUSE -> PAUSE or REC -> STOP(A) -> EJECT
PIN NO.
1 LD-SW
CL/SS
EJ
AU
RS
SF
SM
TL
FB
AL
SB
82 LD-CONT
"Z" C-DRIVE
66 C-F/R
DRUM ROTATION
31 P-ON
65 A-MUTE-H
D-PB-H
44 D-REC-H
DISPLAY
STOP(A)
FF
LD-REV
0.2S
LD-FWD
STOP /EJECT
REV
1.0S
0.5S
REW
REC
REC PAUSE
PAUSE
2.5S Short REV
REC or PAUSE
1.5S
CASS. UNLD
ST-S "ON"
EJECT
0.4S
20mS
40mS
0.1S
1.5S(NTSC)
1.0S(PAL)
1.2S

[DVD SECTION]

Tray Close ~ Play / Play ~ Tray Open



IC PIN FUNCTION DESCRIPTIONS

IC201 (TV/VCR Micro Controller IC)

"H" ≥ 4.5V, "L" ≤ 1.0V

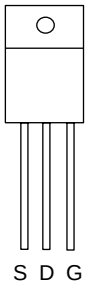
Pin No.	IN/ OUT	Signal Name	Function
1	IN	LD-SW	Loading Switch Input
2	-	NU	Not Used
3	IN	P-SAFETY 2	Power Supply Failure Detection 2
4	IN	ST/SAP-IN	Tuner Stereo/Sap Detector Signal Input
5	IN	KEY0	Key 0 Input
6	IN	KEY1	Key 1 Input
7	IN	END-SENS	End-Sensor
8	IN	AFT	AFT Input
9	IN	ST-SENS	Start-Sensor
10	IN	V-ENV	Video Envelope Input
11	OUT	VOLUME	Output Volume Control Signal
12	OUT	SP-MUTE	Speaker Mute Output
13	OUT	DV-SYNC	Artificial V-Sync Output
14	IN	REMOTE	Remote Signal Input
15	OUT	ROTA	Color Phase Rotary Changeover SIgnal
16	OUT	V-H-SW	Video Head Amp Switching Pulse
17	IN	ENV-DET	Envelope Comparator Signal
18	OUT	RF-SW	Video Head Switching Pulse
19	OUT	Hi-Fi-H-SW	HiFi Audio Head Switching Pulse
20	-	NU	Not Used
21	OUT	REC-LED	Recording LED Control Signal
22	IN	NORMAL-H	Audio Mode Input Signal
23	OUT	ACL-CONT	ACL Control Signal
24	-	NU	Not Used
25	-	DVD-REMOTE	Remote Control Signal to DVD
26	OUT	TV/VCR-LED	TV/VCR Mode LED Control Signal
27	-	NU	Not Used
28	-	NU	Not Used
29	OUT	D-REC-H	Delayed Record Signal
30	-	NU	Not Used
31	OUT	P-ON-H	Power On Signal at High
32	-	NU	Not Used
33	IN	REC-SAFETY	Record Protection Tab Detection
34	IN	RESET	System Reset Signal (Reset="L")
35	IN	XC-IN	Sub Clock 32 kHz
36	OUT	XC-OUT	Sub Clock 32 kHz
37	-	TIMER+5V	Vcc
38	IN	X-IN	Main Clock Input
39	OUT	X-OUT	Main Clock Output
40	-	GND	GND
41	OUT	SPOT-KILL	Counter-measure for Spot
42	IN	DVD-MAIN-POWER	Power On Signal to High for DVD
43	IN	CLKSEL	Clock Select (GND)
44	OUT	D-REC-H	Delayed Record Signal
45	IN	I2C-OPEN	White Balance Adjust Mode Judgment
46	-	GND	GND
47	OUT	DVD-A-MUTE	DVD Audio Mute Signal
48	OUT	DVD-H	DVD at High
49	-	GND	OSD GND
50	-	CS	Chip Select
51	OUT	SCLK	HiFi Communication Clock
52	IN/ OUT	SDATA	Serial Data
53	-	P-ON+5V	OSD Vcc
54	-	HLF	HLF
55	IN	V-HOLD	VHOLD
56	IN	CV-IN	Video Signal Input
57	-	GND	GND
58	IN	H-SYNC	H-SYNC Input
59	IN	V-SYNC	V-SYNC Input
60	OUT	OSD-BLK	Output for Picture Cut off

Pin No.	IN/ OUT	Signal Name	Function
61	OUT	DG-ON-H	Degaussing Coil Control Signal
62	OUT	OSD-B	Blue Output
63	OUT	OSD-G	Green Output
64	OUT	OSD-R	Red Output
65	OUT	A-MUTE	Audio Mute Output
66	OUT	C-F/R	Capstan Motor FWD/REV Control Signal
67	OUT	D-REC-L/ PLAY-H	Recording/Playback Output
68	OUT	YCA-SDA	YCA IC Control Data
69	OUT	YCA-CS	YCA IC Control Chip Select
70	OUT	YCA-SCL	YCA IC Control Clock
71	OUT	SCL	E2PROM/CHROMA IC Tuner Communication Clock
72	IN/ OUT	SDA	E2PROM/CHROMA IC Tuner Communication Data
73	-	NU	Not Used
74	IN	C-SYNC	C-Sync Input
75	-	NU	Not Used
76	OUT	C-CONT	Capstan Motor Control Signal
77	OUT	D-CONT	Drum Motor Control Signal
78	IN	P-SAFETY 3	Power Supply Failure Detection 3
79	-	NU	Not Used
80	IN	T-REEL	Take Up Reel Rotation Signal
81	-	NU	Not Used
82	OUT	LD-CONT	Loading Motor Control Signal
83	-	NU	Not Used
84	IN	P-DOWN	Power Voltage Down Detector Signal
85	-	NU	Not Used
86	-	NU	Not Used
87	IN	C-FG	Capstan Motor Rotation Detection Pulse
88	-	GND	GND (AMP)
89	-	NU	Not Used
90	IN	D-PFG	Drum Motor Pulse Generator

Pin No.	IN/ OUT	Signal Name	Function
91	-	NU	Not Used
92	OUT	AMP-VREF-IN	Standard Voltage Input
93	-	C	C
94	IN/ OUT	CTL (-)	CTL (-)
95	IN/ OUT	CTL (+)	CTL (+)
96	-	AMPC	AMPC
97	OUT	CTL-AMP-OUT	Control Amp Output
98	-	P-ON+5V	Power Supply for AMP
99	-	AL+5V	A/D, D/A Standard Voltage
100	IN	P-SAFETY 1	Power Supply Failure Detection 1

LEAD IDENTIFICATIONS

2SK3561



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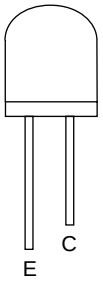

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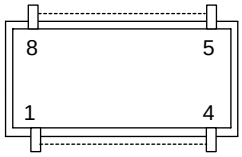

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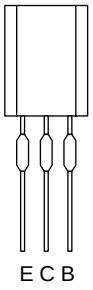

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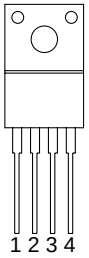
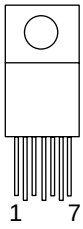
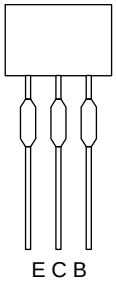


1: Vin
2: Vo
3: GND
4: Vc

LA78041-E





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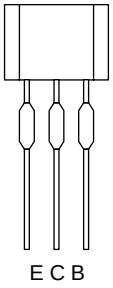
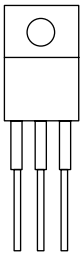
2SC1815-GR(TPE2)
2SC2120-O-TPE2
2SC2120-Y(TPE2)



2SA1175(F)
2SA950(O,Y)
2SC1627Y-TPE2
2SC2785(F)
2SC3331(T,U)
2SC3400
2SC3708S

BA1F4M-T
BN1F4M-T
KRA103M
KRC103M
KTA1267(GR)
KTA1271(Y)
KTC3199(GR)

KA7805A
KIA7805API



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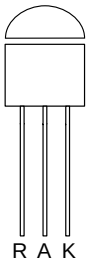

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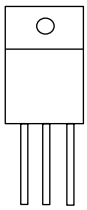
KTD2059(O,Y)
TT2190LS
TT2142



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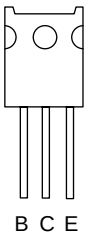

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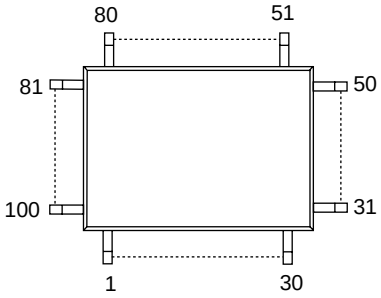
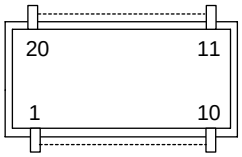
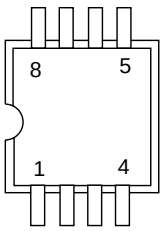


M61113FP

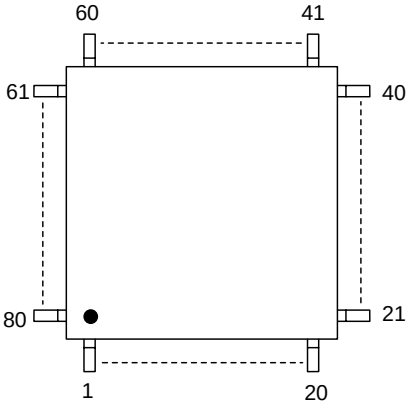


LTV-817C-F
PC817X6

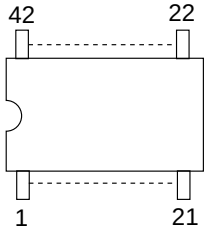
BR24C02F-W
BR24L02F-WE2
CAT24WC02JI
M24C02-WMN6



LA71205M-MPB-E
LA72670BM-MPB-E
LA72670M-A-MPB-E



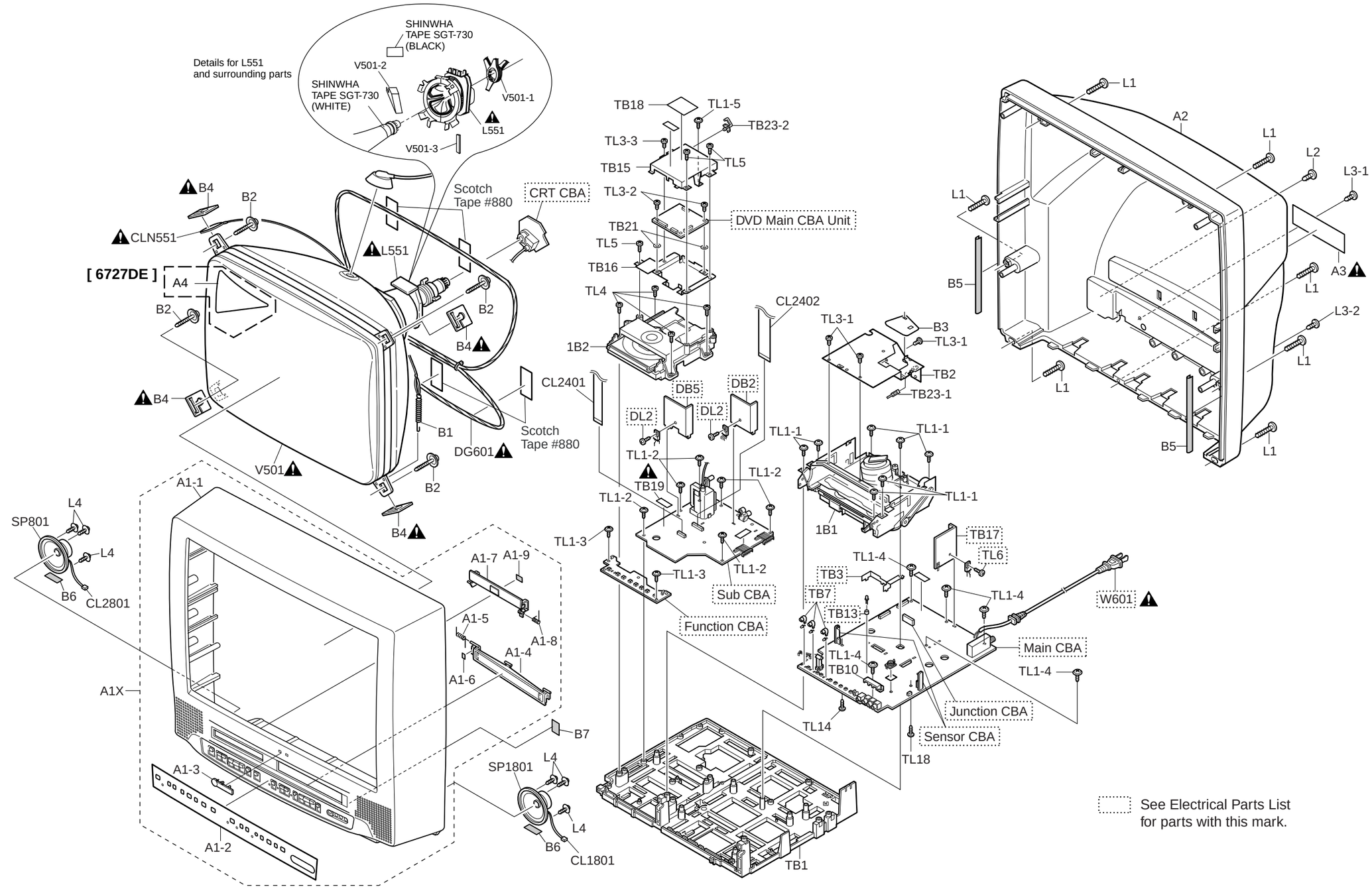
M61276FP



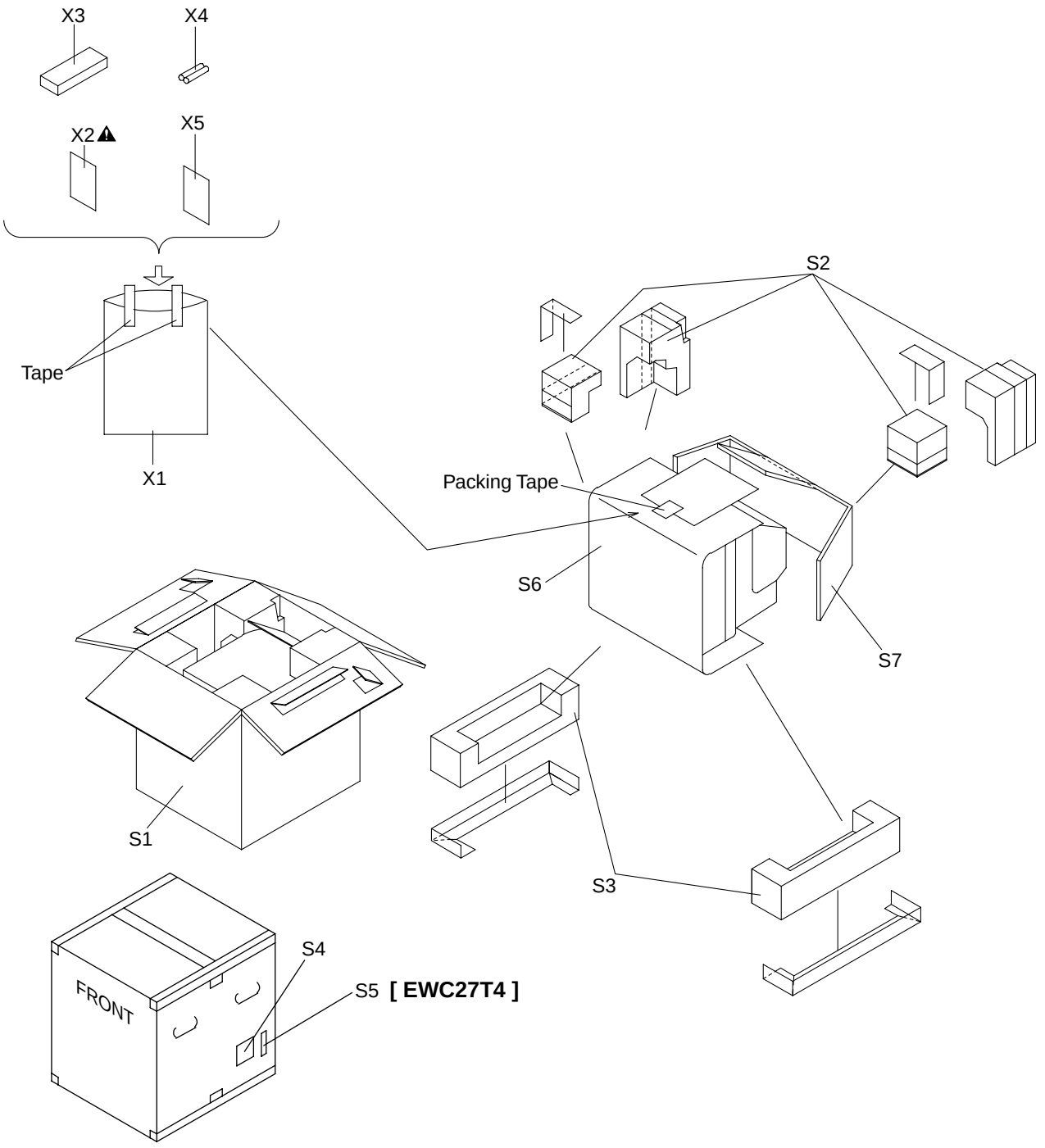
Note:
A: Anode
K: Cathode
E: Emitter
C: Collector
B: Base
R: Reference
S: Source
G: Gate
D: Drain

EXPLODED VIEWS

Cabinet



Packing


X3
X4
X2 ⚠
X5
Tape
X1
S2
Packing Tape
S6
S7
S1
S3
S4
S5 [EWC27T4]
FRONT

MECHANICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTE:
Parts that are not assigned part numbers (---------) are not available.

Comparison Chart of Models and Marks

Model	Mark
6727DE	A
EWC27T4	B

Ref. No.	Mark	Description	Part No.
A1X	A	FRONT CABINET ASSEMBLY T6001UB	0EM000957
A1X	B	FRONT CABINET ASSEMBLY T6002UC	1EM020001
A1-1	A	FRONT CABINET TD951UB	0EM000772
A1-1	B	FRONT CABINET T6002UC	1EM020002
A1-2	A	PLATE CONTROL T6001UB	0EM201868
A1-2	B	PLATE CONTROL T6002UC	1EM220001
A1-3	A	BADGE L BRAND TD951UBSYLVANIA	0EM408107
A1-3	B	BADGE L BRAND TD351UBEMERSON	0EM407162
A1-4	A	DOOR CASSETTE TD951UB	0EM408092
A1-4	B	DOOR CASSETTE T6002UC	1EM420002
A1-5		SPRING DOOR(Z10) T5200UA	0EM406687
A1-6		CLOTH(4X7XT0.7) T5000UA	0EM404974
A1-7	A	PANEL TRAY TD601UB	0EM407373A
A1-7	B	TRAY PANEL TD354UE	0EM406751A
A1-8		TRAY SPRING TD707UH	0EM408552
A1-9		CLOTH(B) L5201U0:15X10X1.0T	0EM400076
A2		REAR CABINET T6001UB	0EM000918
A3⚠	A	RATING LABEL T6001UB	----------
A3⚠	B	RATING LABEL T6002UC	----------
A4	A	LABEL POP TD951UB	----------
B1		SPRING TENSION B0080B0:EM40808	26WH006
B2		SCREW M7 CRT(D22) T7205UF	0EM406573
B3		SHIELD PLATE T5500UA	0EM408707
B4⚠		HOLDER DEGAUSS L1200UA	0EM405869
B5		CLOTH 190X15XT0.5	TS7623
B6		CLOTH(10X30XT0.5) B5900UA	0EM404486
B7		CLOTH(15X10XT0.5) L9700UA	0EM405038
1B1		DECK ASSEMBLY CZD013/VM2266	N2266FT
1B2		DVD MECHA(TRP-COMBO) 0838 VCZL0500	N79T0HVM
CL1801		WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CL2401		FFC WIRE FFC12P	WX1TD800-003
CL2402		FFC WIRE 22P 22P 230MM	WX1T1000-003
CL2801		WIRE ASSEMBLY SPEAKER WIRE(180MM)	WX1L9800-001
CLN551⚠		CRT GND WIRE CRT GND	WX1L1200-007
DG601⚠		DEGAUSSING COIL F-029 or	LLBH00ZTM029
⚠		DEGAUSSING COIL AVDG156	LLBH00ZWR043
L1		SCREW, P-TIGHT 4X18 BIND HEAD +	GBMP4180
L2		SCREW TAPPING M4X14	DBU14140
L3-1		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
L3-2		SCREW, P-TIGHT 3X10 BIND HEAD+	GBKP3100
L4		SCREW, ASSEMBLED 12:M3X12	0EM406746
SP801		SPEAKER S08F02B or	DSD0808XQ010
		SPEAKER J-F097-C5	DSD0808DCP01
SP1801		SPEAKER J-F097-C5 or	DSD0808DCP01
		SPEAKER S08F02B	DSD0808XQ010
TB1		TRAY CHASSIS T1000UA	0EM000874
TB2		TOP SHIELD T5500UA	0EM201787
TB10		RCA HOLDER T1000UA	0EM409108
TB15		X5 LOADER SHIELD TOP T1000UA	0EM302066
TB16		X5 LOADER SHIELD BTM T1000UA	0EM302067
TB18		LABEL, LASER CAUTION (C) TD100UA	----------
TB19⚠		27V CHASSIS NO.LABEL TJ T6001UB	----------
TB21		LOADER WASHER T1000UA	0EM409064
TB23-1		WIRE HOLDER A T1000UA	0EM409109
TB23-2		WIRE HOLDER B T1000UA	0EM409110
TL1-1		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL1-2		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL1-3		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL1-4		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL1-5		SCREW, P-TIGHT 3X12 WASHER HEAD+	GCMP3120
TL3-1		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL3-2		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL3-3		SCREW, S-TIGHT 3X4 BIND HEAD+	GBMS3040
TL4		SCREW, P-TIGHT 3X16 BIND HEAD +	GBMP3160
TL5		P-TIGHT SCREW 3X8 BIND +	GBMP3080
TL14		SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TL18		SCREW, P-TIGHT M3X8 BIND HEAD+	GBCP3080
V501-2		WEDGE DB25SR or	XV10000D9001
		WEDGE FT-00110W	XV10000T4001
PACKING			
S1	A	CARTON T6001UB	0EM409268
S1	B	CARTON T6002UC	1EM420005
S2		STYROFOAM TOP ASSEMBLY TD370UA	0EM406721
S3		STYROFOAM BOTTOM ASSEMBLY TD370UA	0EM406722
S4	A	SERIAL NO. LABEL T6001UB	----------
S4	B	SERIAL NO. LABEL T6002UC	----------
S5	B	LABEL, EAS(H3761UD) MAKER NO.ZLLFNSLE1	----------
S6		SHEET SET PCEC:003502019816	0EM403887
S7		PAD HOLD TD370UA	0EM406716
ACCESSORIES			
X1		BAG POLYETHYLENE 235X365XT0.03	0EM408420
X2⚠	A	OWNER'S MANUAL T6001UB	0EMN02539
X2⚠	B	OWNER'S MANUAL T6002UC	1EMN20001
X3	A	REMOTE CONTROL 151/ECNX501/ NE222UD	NE222UD
X3	B	REMOTE CONTROL 151/ECNX501/ NE223UD	NE223UD
X4		DRY BATTERY R6P UM3 or	XB0M451GH001
		DRY BATTERY R6P(AR)2PX or	XB0M451HU002
		DRY BATTERY R6P(AR)2P X ICI or	XB0M451HU003
		DRY BATTERY(SUNRISE) R6SSE/2S or	XB0M451MS002
		DRY BATTERY R6P/2S	XB0M451T0001
X5	A	SHEET RETURN STOP L6101UB	0EM407077
X5	B	SHEET RETURN STOP T4259UK	0EM406203A

Ref. No.	Mark	Description	Part No.
Note: 1. V501 (CRT) HAS COUPLE OF SUBSTITUTIONAL PARTS AND EACH PARTS ALSO HAS MATCHING COMBINATION WITH L551. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION. 2. L551 (DEFLECTION YOKE) HAS MATCHING COMBINATION WITH V501. PLEASE SEE TABLE 1 FOR DETAILS OF MATCHING COMBINATION.			
CRT TYPE A			
L551⚠		DEFLECTION YOKE CDY-F2927H or	LLBY00ZQS014
⚠		DEFLECTION YOKE CDY-FT2918	LLBY00Z0X003
V501⚠		CRT A68QBT892X	TCRT190SM028
V501-1		PCM JH88DTA	XM04000BV010
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE B			
L551⚠		DEFLECTION YOKE CDY-29029F	LLBY00ZQS012
V501⚠		CRT A68KTB359X(B) or	TCRT190QS024
⚠		CRT A68KTB359X(PB)	TCRT190QS025
V501-1		PCM JH88DTA	XM04000BV010
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001
CRT TYPE C			
L551⚠		DEFLECTION YOKE 6150Z-1046A or	LLBY00ZGS008
⚠		DEFLECTION YOKE KDY4UWE21X	LLBY00ZMS026
V501⚠		CRT A68QBC230X	TCRT190GS043
V501-1		PCM JH88DTA	XM04000BV010
V501-3		RUBBER MAGNET 20X10X1.2	XM05000BV001

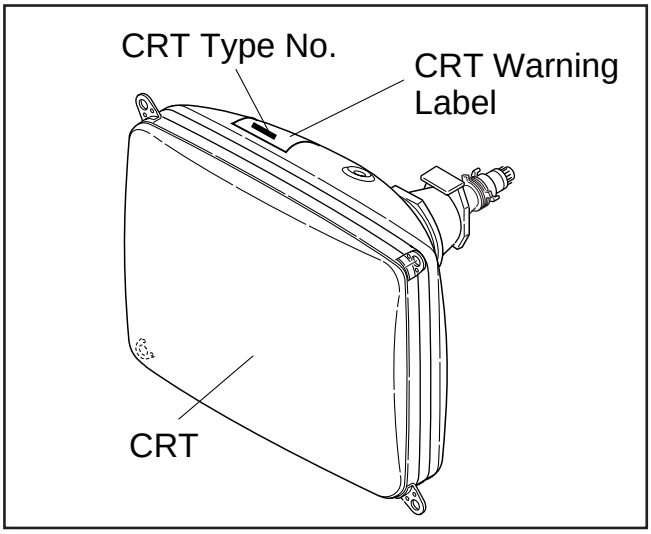
Table 1 (V501 and L551 Combination)

Note 1: Purity and Convergence Adjustments must be performed following CRT replacement. Refer to Electrical Adjustment Instructions.

Note 2: Please confirm CRT Type No. on the CRT Warning Label which is located on the CRT. Then See the Table 1 for V501 and L551 combination chart.
Please refer this CRT, Deflection Yoke combination chart for parts order.

V501: CRT Type No.	V501: CRT Part No.	L551: Deflection Yoke Part No.
A68QBT892X	TCRT190SM028	LLBY00ZQS014
		LLBY00Z0X003
A68KTB359X(B)	TCRT190QS024	LLBY00ZQS012
A68KTB359X(PB)	TCRT190QS025	LLBY00ZQS012
A68QBC230X	TCRT190GS043	LLBY00ZGS008
		LLBY00ZMS026

CRT Warning Label Location



ELECTRICAL PARTS LIST

PRODUCT SAFETY NOTE: Products marked with a ⚠ have special characteristics important to safety. Before replacing any of these components, read carefully the product safety notice in this service manual. Don't degrade the safety of the product through improper servicing.

NOTES:

1. Parts that are not assigned part numbers (---------) are not available.
2. Tolerance of Capacitors and Resistors are noted with the following symbols.

C.....±0.25%	D.....±0.5%	F.....±1%
G.....±2%	J.....±5%	K.....±10%
M.....±20%	N.....±30%	Z.....+80/-20%

DVD MAIN CBA UNIT

Ref. No.	Description	Part No.
	DVD MAIN CBA UNIT	N79T0HUP

MMA CBA

Ref. No.	Description	Part No.
	MMA CBA Consists of the following	1ESA10064
	MAIN CBA SENSOR CBA	---------- 1ESA10039

MAIN CBA

Ref. No.	Description	Part No.
	MAIN CBA Consists of the following	----------
	CAPACITORS	
C005	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C007	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C008	ELECTROLYTIC CAP. 10µF/50V M H7	CE1JMAVSL100
C009	CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJBCH181
C010	CHIP CERAMIC CAP. CH J 180pF/50V	CHD1JJBCH181
C032	CHIP CERAMIC CAP. B K 0.047µF/50V	CHD1JKB0B473
C033	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C036	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C038	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C039	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C044	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C048	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C051	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C054	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C055	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C070	FILM CAP.(P) 0.018µF/50V J or	CMA1JJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
C074	CERAMIC CAP.(AX) F Z 0.01µF/50V	CA1J103TU014
C075	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C114	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C115	PCB JUMPER D0.6-P5.0	JW5.0T
C116	PCB JUMPER D0.6-P5.0	JW5.0T
C117	CHIP CERAMIC CAP. B K 680pF/50V	CHD1JKB0B681
C118	CHIP CERAMIC CAP. B K 680pF/50V	CHD1JKB0B681
C203	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C206	CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C207	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C208	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C210	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C211	CHIP CERAMIC CAP. B K 0.022µF/50V	CHD1JKB0B223
C212	CHIP CERAMIC CAP. CH J 22pF/50V	CHD1JJBCH220
C213	CHIP CERAMIC CAP. CH J 22pF/50V	CHD1JJBCH220
C214	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C216	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C217	CHIP CERAMIC CAP. CH D 10pF/50V	CHD1JDBCH100
C218	CHIP CERAMIC CAP. CH J 15pF/50V	CHD1JJBCH150
C219	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C220	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C221	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C222	CHIP CERAMIC CAP. B K 2200pF/50V	CHD1JKB0B222
C223	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C224	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C225	CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJBCH561
C226	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C233	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C234	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C235	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C236	CERAMIC CAP.(AX) F Z 0.047µF/16V	CCA1CZTFZ473
C239	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C240	CHIP CERAMIC CAP. CH J 560pF/50V	CHD1JJBCH561
C241	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C243	ELECTROLYTIC CAP. 22µF/16V M LL or	CE1CMASLL220
	ELECTROLYTIC CAP. 22µF/16V M LL	CE1CMASLH220
C244	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C245	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C246	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C247	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C248	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C249	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C251	CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JKB0B272
C252	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C253	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C254	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C261	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C299	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C301	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C302	CERAMIC CAP.(AX) SL J 33pF/50V	CCA1JJTSL330
C303	CHIP CERAMIC CAP. CH J 33pF/50V	CHD1JJBCH330
C304	CHIP CERAMIC CAP. CH J 33pF/50V	CHD1JJBCH330
C309	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105

Ref. No.	Description	Part No.
C310	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C311	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C314	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C316	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C317	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C318	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C319	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C321	ELECTROLYTIC CAP. 330µF/6.3V M or	CE0KMASDL331
	ELECTROLYTIC CAP. 330µF/6.3V M	CE0KMASTL331
C322	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C323	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C325	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
C327	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C329	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C332	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C333	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C336	TF CAP. 0.47µF/50V J or	CT1J474MS045
	FILM CAP. 0.47µF/50V J	122Z317S
C337	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C338	CHIP CERAMIC CAP. F Z 2.2µF/10V	CHD1AZB0F225
C339	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C342	ELECTROLYTIC CAP. 470µF/10V M or	CE1AMASDL471
	ELECTROLYTIC CAP. 470µF/10V M	CE1AMASTL471
C343	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C350	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C394	PCB JUMPER D0.6-P5.0	JW5.0T
C410	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C411	ELECTROLYTIC CAP. 100µF/10V M H7	CE1AMAVSL101
C412	CHIP CERAMIC CAP. F Z 0.01µF/50V	CHD1JZB0F103
C413	CHIP CERAMIC CAP. CH J 390pF/50V	CHD1JJBCH391
C414	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
C416	CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C417	CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C418	CERAMIC CAP.(AX) B K 0.1µF/50V	CA1J104TU011
C419	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C420	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C421	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C422	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C423	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C424	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C425	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C426	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C427	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C428	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C429	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C430	CHIP CERAMIC CAP. B K 0.022µF/50V	CHD1JKB0B223
C431	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C432	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C433	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C435	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C436	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C437	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220

Ref. No.	Description	Part No.
C438	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C439	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C440	CHIP CERAMIC CAP. F Z 0.022µF/50V	CHD1JZB0F223
C441	CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C442	CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C443	CHIP CERAMIC CAP. F Z 0.047µF/50V	CHD1JZB0F473
C444	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C445	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C447	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C449	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C450	CHIP CERAMIC CAP. CH J 100pF/50V	CHD1JJBCH101
C452	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C461	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C463	CHIP CERAMIC CAP. CH J 820pF/25V	CHD1EJBCH821
C464	CHIP CERAMIC CAP. B K 2700pF/50V	CHD1JKB0B272
C465	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C466	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C467	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C468	ELECTROLYTIC CAP. 33µF/16V M H7	CE1CMAVSL330
C469	CHIP CERAMIC CAP. B K 0.015µF/50V	CHD1JKB0B153
C605⚠	METALLIZED FILM CAP. 0.1µF/250V or	CT2E104MS037
⚠	FILM CAP.(MP) 0.1µF/250V K or	CT2E104DC011
⚠	METALLIZED FILM CAP. 0.1µF/275V K or	CT2E104HJE06
⚠	LINE ACROSS CAP. 0.1U/250V	CT2E104DC015
C606	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
	CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
	CERAMIC CAP. E Z 0.01µF/500V	CCD2JZP0E103
C607	CERAMIC CAP. F Z 0.01µF/500V or	CCD2JZP0F103
	CERAMIC CAP. 0.01µF/AC250V or	CCD2EZA0F103
	CERAMIC CAP. E Z 0.01µF/500V	CCD2JZP0E103
C610	ELECTROLYTIC CAP. 560µF/200V or	CA2D561NC013
	ELECTROLYTIC CAP. 560µF/200V M W/F	CA2D561EA029
C611	CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
	CERAMIC CAP. 680pF/2KV or	CA3D681PAN04
	CERAMIC CAP. RB 680pF/2KV	CA3D681TE006
C612	FILM CAP.(P) 0.047µF/50V J or	CMA1JJS00473
	FILM CAP.(P) 0.047µF/50V J	CA1J473MS029
C613	FILM CAP.(P) 0.0015µF/50V J or	CMA1JJS00152
	FILM CAP.(P) 0.0015µF/50V J	CA1J152MS029
C614	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J	CA1J104MS029
C615	CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
	CERAMIC CAP. 680pF/2KV or	CA3D681PAN04
	CERAMIC CAP. RB 680pF/2KV	CA3D681TE006
C616	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPTL101
	ELECTROLYTIC CAP. 100µF/160V M W/F	CE2CMZNTL101
C617⚠	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMASDL471
⚠	ELECTROLYTIC CAP. 470µF/35V M	CE1GMASTL471
C618⚠	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
⚠	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC)	CE1CMZNTL102
C619⚠	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
⚠	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC)	CE1CMZNTL102
C620⚠	ELECTROLYTIC CAP. 1000µF/16V M or	CE1CMZPDL102
⚠	ELECTROLYTIC CAP. 1000µF/16V M(VR/HC)	CE1CMZNTL102
C621	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C622	FILM CAP.(P) 0.0047µF/50V J or	CMA1JJS00472
	FILM CAP.(P) 0.0047µF/50V J	CA1J472MS029
C624	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C625	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASDLR47

Ref. No.	Description	Part No.
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASTLR47
C626⚠	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
⚠	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C630	SAFETY CAP. 4700pF/250V KX	CA2E472MR050
C632	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C633	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C640⚠	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
⚠	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C642	CHIP CERAMIC CAP. B K 1000pF/50V	CHD1JKB0B102
C643	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C650	CERAMIC CAP.(AX) B K 2200pF/50V	CA1J222TU011
C661	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C671	CERAMIC CAP. B K 2200pF/500V or	CCD2JKP0B222
	CERAMIC CAP. B K 2200pF/500V	CCD2JKS0B222
C683	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C684	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C685	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C687	ELECTROLYTIC CAP. 22µF/50V M or	CE1JMASDL220
	ELECTROLYTIC CAP. 22µF/50V M	CE1JMASTL220
C688	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C689	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C701	CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C722	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C732	CHIP CERAMIC CAP. F Z 1µF/10V	CHD1AZB0F105
C740	CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C747	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C748	CHIP CERAMIC CAP. B K 0.022µF/50V	CHD1JKB0B223
C749	CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C751	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C752	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C753	ELECTROLYTIC CAP. 10µF/25V M H7	CE1EMAVSL100
C754	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C755	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C756	ELECTROLYTIC CAP. 10µF/25V M H7	CE1EMAVSL100
C757	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C758	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C759	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C760	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C761	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C762	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C763	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C764	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C765	CHIP CERAMIC CAP. B K 0.022µF/50V	CHD1JKB0B223
C766	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C767	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C768	ELECTROLYTIC CAP. 10µF/25V M H7	CE1EMAVSL100
C769	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C770	CHIP CERAMIC CAP. B K 4700pF/50V	CHD1JKB0B472
C771	CHIP CERAMIC CAP. B K 0.01µF/50V	CHD1JKB0B103
C772	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7

Ref. No.	Description	Part No.
C773	ELECTROLYTIC CAP. 10µF/25V M H7	CE1EMAVSL100
C774	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C775	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C776	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C777	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C778	CERAMIC CAP.(AX) B K 0.01µF/50V	CA1J103TU011
C779	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C780	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C781	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C782	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C783	ELECTROLYTIC CAP. 1µF/50V M H7	CE1JMAVSL1R0
C784	CHIP CERAMIC CAP. F Z 0.1µF/50V	CHD1JZB0F104
C786	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C787	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C788	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C789	ELECTROLYTIC CAP. 22µF/16V M H7	CE1CMAVSL220
C790	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C791	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C792	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C793	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C794	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C795	ELECTROLYTIC CAP. 4.7µF/50V M H7	CE1JMAVSL4R7
C797	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C798	ELECTROLYTIC CAP. 100µF/6.3V H7	CE0KMAVSL101
C801	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C802	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C807	ELECTROLYTIC CAP. 220µF/16V M or	CE1CMASDL221
	ELECTROLYTIC CAP. 220µF/16V M	CE1CMASTL221
C810	CHIP CERAMIC CAP. B K 680pF/50V	CHD1JKB0B681
C811	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASDLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASTLR47
C812	CHIP CERAMIC CAP. B K 680pF/50V	CHD1JKB0B681
C813	ELECTROLYTIC CAP. 0.47µF/50V M or	CE1JMASDLR47
	ELECTROLYTIC CAP. 0.47µF/50V M	CE1JMASTLR47
C814	ELECTROLYTIC CAP. 2.2µF/50V M H7	CE1JMAVSL2R2
C815	ELECTROLYTIC CAP. 100µF/16V M or	CE1CMASDL101
	ELECTROLYTIC CAP. 100µF/16V M	CE1CMASTL101
C818	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C819	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C821	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C870	ELECTROLYTIC CAP. 47µF/6.3V M H7	CE0KMAVSL470
C871	ELECTROLYTIC CAP. 100µF/16V M H7	CE1CMAVSL101
C872	CERAMIC CAP. B K 470pF/100V or	CCD2AKS0B471
	CERAMIC CAP. B K 470pF/500V	CCD2JKS0B471
C873	FILM CAP.(P) 0.018µF/100V J or	CMA2AJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
	CONNECTORS	
CN301	TWG CONNECTOR 19P TWG-P19X	JCTWA19TG001
CN302	CONNECTOR BASE, 5P TUC-P05P-B1	J3TUA05TG001
CN601	CONNECTOR BASE, 2P TV-50P-02-V3 or	J3TVC02TG002
	CONNECTOR BASE, 2P RTB-1.5-2P	J3RTC02JG001
CN602	TWG CONNECTOR 19P TWG-P19X	JCTWA19TG001
CN802	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002

Ref. No.	Description	Part No.
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
CN803	TWG CONNECTOR 07P TWG-P07P-A1	J3TWA07TG001
	DIODES	
D110	PCB JUMPER D0.6-P5.0	JW5.0T
D201	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D204	LED LTL-4214M1 or	NPQZLTL4214M
	LED LAMP 333HT/F45-50K or	NPWK333HTF45
	LED LAMP 333HT/F45-50L or	NPWL333HTF45
	LED LAMP 333HT/F45-50M	NPWM333HTF45
D206	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D216	LED LAMP 333GT/F45-50 or	NPWZ3GTF4550
	LED(GREEN) LTL-4234M1	NPZZ0LTL4234
D217	LED LTL-4214M1 or	NPQZLTL4214M
	LED LAMP 333HT/F45-50K or	NPWK333HTF45
	LED LAMP 333HT/F45-50L or	NPWL333HTF45
	LED LAMP 333HT/F45-50M	NPWM333HTF45
D224	LED SIR-563ST3F P or	QPQPS1R563ST
	LED SIR-563ST3F Q or	QPQQS1R563ST
	LED MIE-534A2	NPZZM1E534A2
D227	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D229	ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
	ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D230	ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
	ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D231	ZENER DIODE MTZJT-7718A or	QDTA00MTZJ18
	ZENER DIODE DZ-18BSAT265	NDTA00DZ18BS
D232	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D234	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D302	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D303	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D304	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D305	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D306	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D307	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D308	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D309	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D311	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D318	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D350	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D351	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D352	ZENER DIODE MTZJT-779.1B or	QDTB0MTZJ9R1
	ZENER DIODE DZ-9.1BSBT265	NDTB0DZ9R1BS
D353	ZENER DIODE MTZJT-779.1B or	QDTB0MTZJ9R1
	ZENER DIODE DZ-9.1BSBT265	NDTB0DZ9R1BS

Ref. No.	Description	Part No.
D419	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D420	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D603⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D604⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D605⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D606⚠	DIODE 1N5406 or	NDLZ001N5406
⚠	DIODE ERC04-06L3	QD4Z0ERC0406
D607⚠	ZENER DIODE MTZJT-7724C or	QDTC00MTZJ24
⚠	ZENER DIODE DZ-24BSCT265	NDTC00DZ24BS
D609⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D610	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D611	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D612	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D613⚠	FAST RECOVERY DIODE FE201-6	QDLZ00FE2016
D614⚠	DIODE FR104-B	NDLZ000FR104
D615⚠	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D616⚠	RECTIFIER DIODE FR202-B/P	NDQZ000FR202
D617⚠	DIODE FR154 or	NDLZ000FR154
⚠	FAST RECOVERY DIODE ERB44-02	QDPZ0ERB4402
D618⚠	SCHOTTKY BARRIER DIODE 11EQS04 or	QD4Z011EQS04
⚠	SCHOTTKY BARRIER DIODE ERA81-004	QDPZERA81004
D619⚠	DIODE FR104-B	NDLZ000FR104
D620⚠	ZENER DIODE MTZJT-776.8B or	QDTB0MTZJ6R8
⚠	ZENER DIODE DZ-6.8BSBT265	NDTB0DZ6R8BS
D621	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D622⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D623	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D626	ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
	ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D627	ZENER DIODE MTZJT-7718C or	QDTC00MTZJ18
	ZENER DIODE DZ-18BSCT265	NDTC00DZ18BS
D628⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D634	ZENER DIODE MTZJT-778.2B or	QDTB0MTZJ8R2
	ZENER DIODE DZ-8.2BSBT265	NDTB0DZ8R2BS
D635	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D636	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D640⚠	DIODE 1ZC33 or	QDQZ0001ZC33
⚠	ZENER DIODE RD33FB	QDQZ000RD33F
D641⚠	ZENER DIODE MTZJT-7736A or	QDTA00MTZJ36
⚠	ZENER DIODE DZ-36BSAT265	NDTA00DZ36BS
D645⚠	SCHOTTKY BARRIER DIODE 21DQ04 or	QDQZ0021DQ04
⚠	SCHOTTKY BARRIER DIODE ERB81-004	AERB81004***
D657	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D659	RECTIFIER DIODE 1N4005	NDQZ001N4005

Ref. No.	Description	Part No.
D660⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D663	ZENER DIODE MTZJT-776.8A or	QDTA0MTZJ6R8
	ZENER DIODE DZ-6.8BSAT265	NDTA0DZ6R8BS
D680⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D682	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D683	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D684	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D685⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D687	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D688⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D691	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D692	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D811	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
ICS		
IC001	IC:VIF/SIF M61113FP	QSZBA0SHT019
IC201⚠	MICRO COMPUTER M3776AMCA-BA5GP	QSZAA0RHT023
IC202	IC:MEMORY BR24C02F-W or	QSMBA0SRM003
	IC:EEPROM CAT24WC02JI or	NSZBA0SBG001
	IC(EEP-ROM) M24C02-WMN6 or	NSZAA0SSS004
	IC BR24L02F-WE2	QSZBA0TRM068
IC301⚠	VCD IC M61276FP	QSZAA0RMB134
IC401	IC:Y/C/A LA71205M-MPB-E	QSZBA0RSY037
IC601⚠	PHOTOCOUPLER LTV-817C-F or	NPEC0LTV817F
⚠	PHOTO COUPLER PC817X6	QPE600PC817X
IC682⚠	VOLTAGE REGULATOR KIA7805API or	NSBBA0SJY011
⚠	VOLTAGE REGULATOR KA7805A	NSZBA0SF3052
IC701	IC:HIFI LA72670M-A-MPB-E or	QSZBA0RSY034
	IC:HIFI LA72670BM-MPB-E	QSZBA0RSY039
IC803	IC AN17812A	QSZBA0SMS017
COILS		
L001	PCB JUMPER D0.6-P5.0	JW5.0T
L003	PCB JUMPER D0.6-P5.0	JW5.0T
L031	INDUCTOR 10µH-J-26T or	LLAXJATTU100
	INDUCTOR 10µH-K-26T	LLAXKDTKA100
L033	INDUCTOR 15µH-J-26T or	LLAXJATTU150
	INDUCTOR 15µH-K-26T	LLAXKDTKA150
L041	INDUCTOR 100µH-K-5FT or	LLARKBSTU101
	INDUCTOR 100µH-K	LLARKDQKA101
L202	INDUCTOR 0.10µH-K-26T	LLAXKATTUR10
L203	PCB JUMPER D0.6-P5.0	JW5.0T
L211	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L302	PCB JUMPER D0.6-P5.0	JW5.0T
L402	INDUCTOR 22µH-J-26T or	LLAXJATTU220
	INDUCTOR 22µH-K-26T	LLAXKDTKA220
L403	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001

Ref. No.	Description	Part No.
L404	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L405	INDUCTOR 47µH-J-26T or	LLAXJATTU470
	INDUCTOR 47µH-K-26T	LLAXKDTKA470
L601⚠	LINE FILTER MS036 or	LLBG00ZY2009
⚠	LINE FILTER 8.2MH ELF21V018A or	LLBG00ZMS036
⚠	LINE FILTER CSA-LF032	LLBG00ZSA007
L751	PCB JUMPER D0.6-P5.0	JW5.0T
L752	PCB JUMPER D0.6-P5.0	JW5.0T
L802	PCB JUMPER D0.6-P5.0	JW5.0T
L804	PCB JUMPER D0.6-P5.0	JW5.0T
L806	PCB JUMPER D0.6-P5.0	JW5.0T
L871	PCB JUMPER D0.6-P5.0	JW5.0T
L872	INDUCTOR 47µH-K-5FT or	LLARKBSTU470
	INDUCTOR 47µH-K-5FT	LLARKDSKA470
TRANSISTORS		
Q205	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q206	PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q207	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q210	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q211	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q221	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
Q350	TRANSISTOR 2SC1627Y-TPE2	QQSY02SC1627
Q351	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q401	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q402	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q403	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q404	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q601⚠	MOS FET 2SK3561	QFWZ02SK3561
Q602⚠	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q603	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q604⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q605	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815

Ref. No.	Description	Part No.
Q606⚠	TRANSISTOR 2SA950(O) or	Q2SA9500TPE2
⚠	TRANSISTOR 2SA950(Y) or	Q2SA950YTPE2
⚠	TRANSISTOR KTA1271(Y)	NQSY0KTA1271
Q607⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q609	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q613	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q614	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q681⚠	TRANSISTOR 2SD400(F) or	QQUF002SD400
⚠	TRANSISTOR 2SD400(E)	QQUE002SD400
Q683⚠	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q688⚠	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
⚠	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q701	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q871	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q872	TRANSISTOR 2SC2120-O-TPE2 or	QQS002SC2120
	TRANSISTOR 2SC2120-Y(TPE2)	QQSY02SC2120
Q873	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q874	TRANSISTOR 2SC3331(T) or	QSC3331TNPAA
	TRANSISTOR 2SC3331(U) or	QSC3331UNPAA
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q875	RES. BUILT-IN TRANSISTOR KRA103M or	NQSZ0KRA103M
	RES. BUILT-IN TRANSISTOR BN1F4M-T	QQSZ00BN1F4M
RESISTORS		
R002	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R003	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R032	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R033	CHIP RES.(1608) 1/10W J 390k Ω	RRXAJB5Z0394
R034	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R035	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R036	CHIP RES.(1608) 1/10W J 220k Ω	RRXAJB5Z0224
R037	CHIP RES.(1608) 1/10W J 180 Ω	RRXAJB5Z0181
R038	CHIP RES.(1608) 1/10W J 200 Ω	RRXAJB5Z0201
R039	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R110	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJB5Z0333
R111	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJB5Z0333
R112	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R113	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R159	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R160	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R163	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R164	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R200	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R201	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R202	CHIP RES. 1/10W G 22k Ω	RRXAGB5Z0223
R203	CHIP RES. 1/10W G 470 Ω	RRXAGB5Z0471
R204	CHIP RES. 1/10W G 1.5k Ω	RRXAGB5Z0152
R205	CHIP RES. 1/10W G 3.6k Ω	RRXAGB5Z0362
R206	CHIP RES. 1/10W G 10k Ω	RRXAGB5Z0103
R208⚠	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104

Ref. No.	Description	Part No.
R209	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R210	CHIP RES. 1/10W G 15k Ω	RRXAGB5Z0153
R211	CHIP RES. 1/10W G 6.8k Ω	RRXAGB5Z0682
R212	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R213	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R214	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R215	CHIP RES. 1/10W G 1.5k Ω	RRXAGB5Z0152
R216	CHIP RES. 1/10W G 1.5k Ω	RRXAGB5Z0152
R217	CARBON RES. 1/4W G 2.2k Ω	RCX4GATZ0222
R218	CHIP RES. 1/10W G 2.7k Ω	RRXAGB5Z0272
R219	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R220	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R221	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R222	CHIP RES.(1608) 1/10W J 470k Ω	RRXAJB5Z0474
R223	CHIP RES.(1608) 1/10W J 560 Ω	RRXAJB5Z0561
R224	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R225	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R226	PCB JUMPER D0.6-P5.0	JW5.0T
R227	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R228	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R229	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R230	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R231	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R232	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R233	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R234	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
R235	CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R236	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R237	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R238	CHIP RES.(1608) 1/10W J 470k Ω	RRXAJB5Z0474
R239	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R240	PCB JUMPER D0.6-P5.0	JW5.0T
R241	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R243	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R244	CHIP RES.(1608) 1/10W J 1M Ω	RRXAJB5Z0105
R245	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R247	CHIP RES.(1608) 1/10W J 820 Ω	RRXAJB5Z0821
R248	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R249	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R250	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R251	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R252	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R253	CHIP RES.(1608) 1/10W J 3.3k Ω	RRXAJB5Z0332
R254	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R255	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R256	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R257	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R258	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R259	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R260	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R261	METAL OXIDE FILM RES. 1W J 1.2 Ω or	RN011R2ZU001
	METAL OXIDE FILM RES. 1W J 1.2 Ω	RN011R2DP003
R262	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R263	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJB5Z0393
R267	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R268	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R269	PCB JUMPER D0.6-P5.0	JW5.0T
R270	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R272	PCB JUMPER D0.6-P5.0	JW5.0T
R273	CHIP RES.(1608) 1/10W J 1.8k Ω	RRXAJB5Z0182
R274	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152

Ref. No.	Description	Part No.
R275	CHIP RES.(1608) 1/10W J 200 Ω	RRXAJB5Z0201
R277	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R278	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R280	PCB JUMPER D0.6-P5.0	JW5.0T
R281	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R283	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R284	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R285	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R286	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R287	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R289	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R290	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R291	PCB JUMPER D0.6-P5.0	JW5.0T
R292	PCB JUMPER D0.6-P5.0	JW5.0T
R294	PCB JUMPER D0.6-P5.0	JW5.0T
R298	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R299	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R301	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R303	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R305	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R308	CARBON RES. 1/4W J 120k Ω	RCX4JATZ0124
R310	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R311	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R312	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R313	CHIP RES.(1608) 1/10W J 200 Ω	RRXAJB5Z0201
R314	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R315	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R316	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R317	CARBON RES. 1/4W J 4.7M Ω	RCX4JATZ0475
R320	CHIP RES.(1608) 1/10W J 470k Ω	RRXAJB5Z0474
R328	CHIP RES.(1608) 1/10W J 2.7k Ω	RRXAJB5Z0272
R329	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R330	CARBON RES. 1/4W J 15 Ω	RCX4JATZ0150
R332	CARBON RES. 1/4W J 15 Ω	RCX4JATZ0150
R333	CHIP RES.(1608) 1/10W J 100 Ω	RRXAJB5Z0101
R334	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R335	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R336	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R337	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R339	CHIP RES.(1608) 1/10W J 5.6k Ω	RRXAJB5Z0562
R340	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R350	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R351	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R355	CARBON RES. 1/4W J 160 Ω	RCX4JATZ0161
R356	CARBON RES. 1/4W J 160 Ω	RCX4JATZ0161
R405	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R406	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R407	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R408	CHIP RES.(1608) 1/10W J 18k Ω	RRXAJB5Z0183
R409	CHIP RES.(1608) 1/10W J 39k Ω	RRXAJB5Z0393
R410	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R411	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R412	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R413	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R414	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R415	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R416	CHIP RES.(1608) 1/10W J 330k Ω	RRXAJB5Z0334
R417	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R418	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R419	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R420	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123

Ref. No.	Description	Part No.
R421	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R422	CHIP RES.(1608) 1/10W J 270 Ω	RRXAJB5Z0271
R424	CHIP RES.(1608) 1/10W J 100k Ω	RRXAJB5Z0104
R425	CHIP RES.(1608) 1/10W J 82k Ω	RRXAJB5Z0823
R426	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R427	CHIP RES.(1608) 1/10W J 820 Ω	RRXAJB5Z0821
R428	CHIP RES.(1608) 1/10W J 680k Ω	RRXAJB5Z0684
R429	CHIP RES.(1608) 1/10W J 1.2k Ω	RRXAJB5Z0122
R430	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R431	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R432	CHIP RES.(1608) 1/10W J 1.5k Ω	RRXAJB5Z0152
R433	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R436	CHIP RES.(1608) 1/10W J 2.2M Ω	RRXAJB5Z0225
R602⚠	CEMENT RES. 7W K 1.2 Ω or	RW071R2DP007
⚠	CEMENT RESISTOR 7W K 1.2 Ω H=25MM or	RW071R2PG002
⚠	CEMENT RESISTOR 7W J 1.2 Ω	RW071R2PAK11
R603⚠	METAL OXIDE FILM RES. 2W J 0.27 Ω or	RN02R27ZU001
⚠	METAL OXIDE FILM RES. 2W J 0.27 Ω	RN02R27DP004
R604	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R605	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R606	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R607	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R608	CARBON RES. 1/4W J 180k Ω	RCX4JATZ0184
R609⚠	CARBON RES. 1/4W J 5.6 Ω	RCX4JATZ05R6
R610	CARBON RES. 1/4W J 1.8k Ω	RCX4JATZ0182
R613	CARBON RES. 1/4W J 68 Ω	RCX4JATZ0680
R614	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R616	PCB JUMPER D0.6-P5.0	JW5.0T
R617	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R618	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R619	CARBON RES. 1/4W J 270 Ω	RCX4JATZ0271
R620⚠	CEMENT RES. 5W J 3.9k Ω or	RW05392DP008
⚠	CEMENT RES. 5W 3.9K J H=25MM or	RW05392PG004
⚠	CEMENT RESISTOR 5W J 3.9k Ω	RW05392PAK13
R621	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R622	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R623	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R624⚠	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R625⚠	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R626	CARBON RES. 1/4W J 82 Ω	RCX4JATZ0820
R627	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R628	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R629⚠	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R630	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R631	CARBON RES. 1/4W J 13k Ω	RCX4JATZ0133
R632⚠	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R633⚠	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R634	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R635	CHIP RES.(1608) 1/10W J 10k Ω	RRXAJB5Z0103
R637	PCB JUMPER D0.6-P5.0	JW5.0T
R638	PCB JUMPER D0.6-P5.0	JW5.0T
R639⚠	CARBON RES. 1/2W J 1.2k Ω or	RCX2JZQZ0122
⚠	CARBON RES. 1/2W J 1.2k Ω	RCX2122KA013
R640⚠	CARBON RES. 1/4W J 56k Ω	RCX4JATZ0563
R641	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R642⚠	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R644⚠	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R645⚠	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R650	PCB JUMPER D0.6-P5.0	JW5.0T
R654⚠	CARBON RES. 1/2W J 4.7 Ω or	RCX2JZQZ04R7
⚠	CARBON RES. 1/2W J 4.7 Ω	RCX24R7KA013

Ref. No.	Description	Part No.
R655⚠	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R662	CARBON RES. 1/4W J 680k Ω	RCX4JATZ0684
R663	CARBON RES. 1/4W J 560k Ω	RCX4JATZ0564
R664	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R665	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R666	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R667	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R671	PCB JUMPER D0.6-P5.0	JW5.0T
R673	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R674	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R675	CHIP RES.(1608) 1/10W J 330 Ω	RRXAJB5Z0331
R676	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R685	METAL OXIDE FILM RES. 1W J 5.6 Ω or	RN015R6ZU001
	METAL OXIDE FILM RES. 1W J 5.6 Ω	RN015R6DP003
R686	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R687	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R688	METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
	METAL OXIDE FILM RES. 1W J 12 Ω	RN01120DP003
R689	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R691	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R692	METAL OXIDE FILM RES. 1W J 8.2 Ω or	RN018R2ZU001
	METAL OXIDE FILM RES. 1W J 8.2 Ω	RN018R2DP003
R693	PCB JUMPER D0.6-P5.0	JW5.0T
R694	METAL OXIDE FILM RES. 1W J 15 Ω or	RN01150ZU001
	METAL OXIDE FILM RES. 1W J 15 Ω	RN01150DP003
R701	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R702	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R703	PCB JUMPER D0.6-P5.0	JW5.0T
R731	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R732	PCB JUMPER D0.6-P5.0	JW5.0T
R734	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R735	PCB JUMPER D0.6-P5.0	JW5.0T
R750	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R751	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R752	CHIP RES.(1608) 1/10W J 12k Ω	RRXAJB5Z0123
R753	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R754	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R755	CHIP RES.(1608) 1/10W J 470 Ω	RRXAJB5Z0471
R756	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R757	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R758	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R759	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R761	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R764	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R766	PCB JUMPER D0.6-P5.0	JW5.0T
R767	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R769	CHIP RES.(1608) 1/10W J 4.7k Ω	RRXAJB5Z0472
R770	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R771	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
R772	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R773	CHIP RES.(1608) 1/10W J 47k Ω	RRXAJB5Z0473
R774	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R780	CHIP RES.(1608) 1/10W J 6.8k Ω	RRXAJB5Z0682
R781	CHIP RES.(1608) 1/10W J 8.2k Ω	RRXAJB5Z0822
R801	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R802	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R803⚠	METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
⚠	METAL OXIDE FILM RES. 1W J 12 Ω	RN01120DP003
R808⚠	METAL OXIDE FILM RES. 1W J 12 Ω or	RN01120ZU001
⚠	METAL OXIDE FILM RES. 1W J 12 Ω	RN01120DP003
R809	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R810	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R813	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R814	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R815	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R816	CHIP RES.(1608) 1/10W J 33k Ω	RRXAJB5Z0333
R871	CHIP RES.(1608) 1/10W J 1k Ω	RRXAJB5Z0102
R872	CHIP RES.(1608) 1/10W J 22k Ω	RRXAJB5Z0223
R873	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R874	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R875	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R876	CHIP RES.(1608) 1/10W J 2.2k Ω	RRXAJB5Z0222
R877	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
	SWITCHES	
SW201	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW202	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW203	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW206	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW207	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW208	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW209	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW210	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW211	LEAF SWITCH LSA-1142-2AU or	SSC0101KB014
	LEAF SWITCH MXS00052MPP0 or	SSC0101MCE01
	LEAF SWITCH MXS00981MPP0	SSC0101MCE02
SW212	ROTARY MODE SWITCH SSS-53MD	SSR0106KB003
	MISCELLANEOUS	
BC600	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC601	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC602	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
BC604	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC605	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC606	BEAD INDUCTORS FBR07HA121TB-00	LLBF00ZTU021
CF031	CERAMIC TRAP 4.5MHz or	FBE455PMR003
	4.5M TRAP XT4.5MB2 or	FBE455PLN001
	CERAMIC TRAP 4.5MHz	FBE455PMS002
CF032	CERAMIC FILTER SFSRA4M50CF00-B0 or	FBB455PMR004
	4.5M FILTER LTH4.5MCB	FBB455PLN001
CL201	FMN CONNECTOR, TOP 12P 12FMN-BTRK	JCFNG12JG002
F2601⚠	FUSE 4.00A/125V or	PAGU20CAG402
⚠	FUSE 51MS040L or	PAFC20CHV402
⚠	FUSE STC4A125V U/CT or	PAGE20CW3402
⚠	FUSE 4.00A/125V	PAGG20CNG402
FH601	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001

Ref. No.	Description	Part No.
FH602	FUSE HOLDER MSF-015 or	XH01Z00LY001
	FUSE HOLDER FH-V-03078	XH01Z00DK001
J1343	CHIP RES.(1608) 1/10W 0 Ω	RRXAZB5Z0000
JK701	RCA JACK(YELLOW) MTJ-032-05B-20 or	JXRL010LY038
	RCA JACK 1P:YELLOW DA1-05A3N0S001	JXRL010RP036
JK702	RCA JACK(WHITE) MTJ-032-05B-22 or	JXRL010LY039
	RCA JACK 1P : WHITE DA1-05A4N0S001	JXRL010RP037
JK703	RCA JACK(RED) MTJ-032-05A-21 or	JYRL010LY010
	RCA JACK 1P:RED(SW) DA1-05A2N1S001	JYRL010RP017
JK801	MINI JACK HSJ2000-01-010 or	JYSL010HD002
	MINI JACK MSJ-2000 or	JYSL010LY003
	PHONE JACK DP3-25-7-001	JYSL010RP002
JM201	PCB JUMPER D0.6-P5.0	JW5.0T
JM351	PCB JUMPER D0.6-P5.0	JW5.0T
JM403	PCB JUMPER D0.6-P27.5	JW27.5T
JM603	PCB JUMPER D0.6-P5.0	JW5.0T
JM801	PCB JUMPER D0.6-P5.0	JW5.0T
PS601⚠	THERMISTOR ZPB45BL7R0A	QNZZ45BL7R0A
RL601⚠	POWER RELAY SDT-S-112LMR or	MRNDC12QN014
⚠	POWER RELAY SDT-SS-112DM or	MRNDC12QN008
⚠	POWER RELAY RPEF-12-901 or	MRNDC12KB002
⚠	RELAY ALKS321 or	MRNDC12MS013
⚠	POWER RELAY ALKS321C92	MRNDC12MS014
RS201	REMOTE RECEIVER PIC-37042LU or	USESJRSKK033
	REMOCON RESEVER MIM-0BM6DKF-C	USESJRSUNT06
SA601⚠	SURGE ABSORBER 470V+-10PER or	NVQZ10D471KB
⚠	SURGE ABSORBER CNR-10D471K	NVQZR10D471K
SF001	SAW FILTER SAFHM45M7VAAZ00B03	FBB456PMR010
SG601⚠	GAP. FNR-G3.10D	FAZ000LD6005
T601⚠	SWITCHING TRANS 04718	LTT00CPKT140
TB3	HEAD SHIELD (X5) T1000UA	0EM302062
TB7	LED HOLDER T1000UA	0EM409114
TB13	BUSH, LED(F) H3700UD	0VM409508
TB17	X5 MAIN HEATSINK PJI ASSEMBLYT1000UA	0EM409069
TL6	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
TP001	PCB JUMPER D0.6-P12.5	JW12.5T
TP002	PCB JUMPER D0.6-P15.0	JW15.0T
TP202	PCB JUMPER D0.6-P17.5	JW17.5T
TP301	PCB JUMPER D0.6-P5.0	JW5.0T
TP302	PCB JUMPER D0.6-P5.0	JW5.0T
TP303	PCB JUMPER D0.6-P5.0	JW5.0T
TP401	PCB JUMPER D0.6-P11.0	JW11.0T
TP402	PCB JUMPER D0.6-P26.5	JW26.5T
TP671	PCB JUMPER D0.6-P11.0	JW11.0T
TP672	PCB JUMPER D0.6-P8.5	JW8.5T
TP673	PCB JUMPER D0.6-P8.5	JW8.5T
TP701	PCB JUMPER D0.6-P13.5	JW13.5T
TP702	PCB JUMPER D0.6-P10.0	JW10.0T
TP703	PCB JUMPER D0.6-P19.0	JW19.0T
TU001	TUNER B9015AF or	UTUNNTUSP025
	TUNER ENV56K02G3	UTUNNTUMS012
VR601⚠	CARBON P.O.T. 10k Ω B	VRCB103HH014
W601⚠	AC CORD PB8K9F9110A-057 or	WAC0172LW008
⚠	AC CORD WAC0172LTE01 or	WAC0172LTE01
⚠	AC CORD WAC0172AS006 or	WAC0172AS006
⚠	AC CORD LA-2366 or	WAC0172LW006
⚠	AC CORD A0A0280-007	WAC0172LTE04
X201	X'TAL 32.768kHz(20PPM) or	FXC323LJNY01
	X'TAL 32.768kHz(20PPM) or	FXC323LCT001
	X'TAL 32.768kHz(20PPM) or	FXC323LDS002
	X'TAL 32.768kHz(20PPM) or	FXC323LQUA01
	X'TAL 32.768kHz(20PPM)	FXC323LCHE01
X202	X'TAL HC-49/U 10.6MHz or	FXD106LLN001
	X'TAL AT49-10.6	FXD106LDS002
X301	X'TAL 3.579545 MHz or	FXD355LLN003
	X'TAL 3.579545MHz(30PPM)	FXD355LCHE01
X401	X'TAL 3.579545MHz(20PPM) or	FXC355LLN003
	X'TAL 3.579545MHz(20PPM) or	FXC355LDS001
	X'TAL 3.579545MHz(20PPM)	FXC355LCHE01

SENSOR CBA

Ref. No.	Description	Part No.
	SENSOR CBA Consists of the following	1ESA10039
	TRANSISTORS	
Q201	PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12
Q202	PHOTO TRANSISTOR MID-32A22F or	NPWZ1D32A22F
	PHOTO TRANSISTOR PT204-6B-12	NPWZT2046B12

MPS CBA

Ref. No.	Description	Part No.
	MPS CBA Consists of the following	0ESA06261
	SUB CBA (MPS-A) CRT CBA (MPS-B) FUNCTION CBA(MPS-C) JUNCTION CBA	---------- ---------- ---------- ----------

SUB CBA

Ref. No.	Description	Part No.
	SUB CBA (MPS-A) Consists of the following	--------
	CAPACITORS	
C530	ELECTROLYTIC CAP. 100µF/35V M or	CE1GMASDL101
	ELECTROLYTIC CAP. 100µF/35V M	CE1GMASTL101
C532⚠	METALLIZED FILM CAP. 0.56µF/200V J or	CT2D564F7001
⚠	METALLIZED FILM CAP. 0.56µF/200V J or	CT2D564F7003
⚠	P.P. CAP 0.56µF/200V J or	CA2D564VC012
⚠	PP CAP. 0.56µF/250V J	CT2E564MS041
C533⚠	P.P.CAP 0.015µF/1.6KV J or	CA3C153VC011
⚠	PP CAP. 0.015µF/1.6KV J or	CT3C153MS039
⚠	METALLIZED FILM CAP. 0.015µF/1.6KV J or	CT3C153F7004
⚠	POLYPROPYLENE FILM CAP. 0.015µF/1.6KV	CT3C153HJE16
C534⚠	P.P. CAP. 0.022µF/200V J or	CA2D223VC013
⚠	P.P. CAP. 0.022µF/200V K	CBP2DKD00223
C535	ELECTROLYTIC CAP. 4.7µF/50V M NP	622Z707
C536	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J	CA1J104MS029
C537	FILM CAP.(P) 0.1µF/50V J or	CMA1JJS00104
	FILM CAP.(P) 0.1µF/50V J	CA1J104MS029
C538	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C539	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMZPDL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZPTL471
C542	PCB JUMPER D0.6-P7.5	JW7.5T
C551	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C552	MYLAR CAP. 0.22µF/50V J or	CMA1JJS00224
	FILM CAP.(P) 0.22µF/50V J	CA1J224MS029
C553	ELECTROLYTIC CAP. 1µF/50V LL or	CE1JMASLH1R0
	ELECTROLYTIC CAP. 1µF/50V M LL or	CE1JMASLL1R0
	ELECTROLYTIC CAP. 1µF/50V M LL or	CE1JMASLL1R0

Ref. No.	Description	Part No.
	ELECTROLYTIC CAP. 1µF/50V M LL	CE1JMASLL010
C555	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C556	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZPDL102
	ELECTROLYTIC CAP. 1000µF/25V M or	CE1EMZZTL102
	ELECTROLYTIC CAP. 1000µF/25V M	CE1EMZPTL102
C558	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C559	ELECTROLYTIC CAP. 470µF/35V M or	CE1GMZPDL471
	ELECTROLYTIC CAP. 470µF/35V M	CE1GMZPTL471
C560	FILM CAP.(P) 0.01µF/50V J or	CMA1JJS00103
	FILM CAP.(P) 0.01µF/50V J	CA1J103MS029
C573⚠	FILM CAP.(P) 0.082µF/100V J or	CMA2AJS00823
⚠	FILM CAP.(P) 0.082µF/100V J TV	CMB2AJS00823
C574⚠	ELECTROLYTIC CAP. 4.7µF/250V M or	CE2EMASDL4R7
⚠	ELECTROLYTIC CAP. 4.7µF/250V M	CE2EMASTL4R7
C577	FILM CAP.(P) 0.018µF/50V J or	CMA1JJS00183
	FILM CAP.(P) 0.018µF/50V J	CA1J183MS029
C578	ELECTROLYTIC CAP. 47µF/35V M or	CE1GMASDL470
	ELECTROLYTIC CAP. 47µF/35V M	CE1GMASTL470
C583	ELECTROLYTIC CAP. 2.2µF/100V M or	CE2AMASDL2R2
	ELECTROLYTIC CAP. 2.2µF/100V M	CE2AMASTL2R2
C584⚠	ELECTROLYTIC CAP. 2.2µF/100V M or	CE2AMASDL2R2
⚠	ELECTROLYTIC CAP. 2.2µF/100V M	CE2AMASTL2R2
C586	ELECTROLYTIC CAP. 4.7µF/50V M or	CE1JMASDL4R7
	ELECTROLYTIC CAP. 4.7µF/50V M	CE1JMASTL4R7
C590	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C591⚠	ELECTROLYTIC CAP. 2.2µF/50V M or	CE1JMASDL2R2
⚠	ELECTROLYTIC CAP. 2.2µF/50V M	CE1JMASTL2R2
C592⚠	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
⚠	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C594	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPDL101
	ELECTROLYTIC CAP. 100µF/160V M or	CE2CMZPTL101
	ELECTROLYTIC CAP. 100µF/160V M W/F	CE2CMZNTL101
C595	CERAMIC CAP. BN 680pF/2KV or	CCD3DKA0B681
	CERAMIC CAP. 680pF/2KV or	CA3D681PAN04
	CERAMIC CAP. RB 680pF/2KV	CA3D681TE006
C595A	PP CAP. 0.0027µF/1.6K J or	CA3C272VC011
	PP CAP. 0.0027µF/1.6KV J or	CT3C272MS039
	METALLIZED FILM CAP. 0.0027µF/1.6KV J or	CT3C272F7004
	POLYPROPYLENE FILM CAP. 0.0027µF/1.6KV	CT3C272HJE15
C1604	ELECTROLYTIC CAP. 1000µF/6.3V M or	CE0KMASDL102
	ELECTROLYTIC CAP. 1000µF/6.3V M	CE0KMASTL102
C1610	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1612	CERAMIC CAP.(AX) B K 100pF/50V	CCA1JKT0B101
C1613	CERAMIC CAP.(AX) CH J 20pF/50V	CCA1JJTCH200
C1615	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
C1616	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1617	ZENER DIODE MTZJT-773.3B or	QDTB0MTZJ3R3
	ZENER DIODE DZ-3.3BSBT265	NDTB0DZ3R3BS
C1618	CERAMIC CAP.(AX) B K 1000pF/50V	CCA1JKT0B102
C1621	ELECTROLYTIC CAP. 10µF/50V M or	CE1JMASDL100
	ELECTROLYTIC CAP. 10µF/50V M	CE1JMASTL100
C1623	CERAMIC CAP.(AX) X M 2200pF/16V	CCA1CMT0X222
C1625	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C1627	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
C1629	ELECTROLYTIC CAP. 220µF/6.3V M or	CE0KMASDL221
	ELECTROLYTIC CAP. 220µF/6.3V M	CE0KMASTL221
C1630	ELECTROLYTIC CAP. 470µF/16V M or	CE1CMASDL471
	ELECTROLYTIC CAP. 470µF/16V M	CE1CMASTL471
C1645	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1647	ELECTROLYTIC CAP. 100µF/10V M or	CE1AMASDL101
	ELECTROLYTIC CAP. 100µF/10V M	CE1AMASTL101
C1654	CERAMIC CAP.(AX) Y M 0.01µF/16V	CCA1CMT0Y103
C1670	ELECTROLYTIC CAP. 470µF/6.3V M or	CE0KMASDL471
	ELECTROLYTIC CAP. 470µF/6.3V M	CE0KMASTL471
	CONNECTORS	
CN502	TWG CONNECTOR 19P TWG-P19P-A1	J3TWA19TG001
CN503	TWG CONNECTOR 19P TWG-P19P-A1	J3TWA19TG001
CN571	CONNECTOR BASE, 5P TV-50P-05-V3 or	J3TVC05TG002
	CONNECTOR BASE, 5P RTB-1.5-5P	J3RTC05JG001
CN1601	FMN CONNECTOR, TOP 12P 12FMN-BTRK	JCFNG12JG002
CN1602	FMN CONNECTOR, TOP 22P 22FMN-BTRK	JCFNG22JG002
	DIODES	
D530⚠	FAST RECOVERY DIODE ERC06-15 or	QDWZ0ERC0615
⚠	DIODE ERD07-15L	QD4ZERD0715L
D531⚠	FAST RECOVERY DIODE ERD38-06	QDQZ0ERD3806
D532	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D533⚠	ZENER DIODE MTZJT-7715B or	QDTB00MTZJ15
⚠	ZENER DIODE DZ-15BSBT265	NDTB00DZ15BS
D534	ZENER DIODE MTZJT-7710B or	QDTB00MTZJ10
	ZENER DIODE DZ-10BSBT265	NDTB00DZ10BS
D552	DIODE FR104-B	NDLZ000FR104
D572⚠	DIODE FR104-B	NDLZ000FR104
D575	ZENER DIODE MTZJT-7710B or	QDTB00MTZJ10
	ZENER DIODE DZ-10BSBT265	NDTB00DZ10BS
D583	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D584	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D585	ZENER DIODE MTZJT-775.1B or	QDTB0MTZJ5R1
	ZENER DIODE DZ-5.1BSBT265	NDTB0DZ5R1BS
D586	PCB JUMPER D0.6-P5.0	JW5.0T
D591⚠	ZENER DIODE MTZJT-7736B or	QDTB00MTZJ36
⚠	ZENER DIODE DZ-36BSBT265	NDTB00DZ36BS
D592	ZENER DIODE MTZJT-7710B or	QDTB00MTZJ10
	ZENER DIODE DZ-10BSBT265	NDTB00DZ10BS
D595⚠	ZENER DIODE MTZJT-7724A or	QDTA00MTZJ24
⚠	ZENER DIODE DZ-24BSAT265	NDTA00DZ24BS
D596⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D597⚠	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
⚠	SWITCHING DIODE 1N4148	NDTZ001N4148
D598⚠	DIODE FR104-B	NDLZ000FR104
D1603	ZENER DIODE MTZJT-775.6C or	QDTC0MTZJ5R6
	ZENER DIODE DZ-5.6BSCT265	NDTC0DZ5R6BS
D1605	ZENER DIODE MTZJT-775.6B or	QDTB0MTZJ5R6
	ZENER DIODE DZ-5.6BSBT265	NDTB0DZ5R6BS
D1613⚠	RECTIFIER DIODE ERA15-02	AERA1502****
D1625	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1627	ZENER DIODE MTZJT-776.2B or	QDTB0MTZJ6R2
	ZENER DIODE DZ-6.2BSBT265	NDTB0DZ6R2BS
D1648	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1649	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133

Ref. No.	Description	Part No.
	SWITCHING DIODE 1N4148	NDTZ001N4148
D1651	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
	ICS	
IC551⚠	IC:VERTICAL OUTPUT LA78041-E	QSZBA0SSY006
IC0603	IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
IC0604	IC:SHUNT REGULATOR KIA431-AT	NSZLA0TJY001
IC1602	VOLTAGE REGULATOR PQ070XF01SZ	QSZBA0SSH026
	COILS	
L505	CHOKE COIL 47µH-K or	LLBD00PKV007
	CHOKE COIL 47µH-K or	LLBD00PKV005
	CHOKE COIL 47µH-K	LLBD00PKT001
L530	LINEARITY COIL STS007 or	LLBD00ZY2002
	LINEARITY COIL ELH5L6129N	LLBD00ZMS007
L531	LINEARITY COIL ST02LN or	LLBD00ZY2003
	CHOKE COIL ELC13B102L	LLC102KMS001
L1610	PCB JUMPER D0.6-P5.0	JW5.0T
L1613	INDUCTOR 22µH-K-5FT or	LLARKBSTU220
	INDUCTOR 22µH-K-5FT	LLARKDSKA220
L1621	INDUCTOR 2.2µH-K-5FT or	LLARKBSTU2R2
	INDUCTOR 2.2µH-K-5FT	LLARKDSKA2R2
	TRANSISTORS	
Q530⚠	TRANSISTOR 2SD1825 or	Q2SD1825****
⚠	TRANSISTOR KTD2059(O) or	NQ400KTD2059
⚠	TRANSISTOR KTD2059(Y)	NQ4Y0KTD2059
Q531	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q532	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q533	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q571	TRANSISTOR 2SC5978 or	QQZZ02SC5978
	TRANSISTOR TT2190LS or	QQZZTT2190LS
	TRANSISTOR TT2142	QQZZ00TT2142
Q591⚠	TRANSISTOR 2SC3708S	QQSS02SC3708
Q592⚠	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
⚠	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
⚠	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1605	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1610	TRANSISTOR 2SA1175(F) or	QQSF02SA1175
	TRANSISTOR KTA1267(GR) or	NQS10KTA1267
	TRANSISTOR 2SA1015-GR(TPE2)	QQS102SA1015
Q1611	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1612	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1615	TRANSISTOR 2SD400(F) or	QQUF002SD400
	TRANSISTOR 2SD400(E)	QQUE002SD400
Q1616	RES. BUILT-IN TRANSISTOR KRC103M or	NQSZ0KRC103M
	RES. BUILT-IN TRANSISTOR 2SC3400 or	2SC3400Z
	RES. BUILT-IN TRANSISTOR BA1F4M-T	QQSZ00BA1F4M
Q1617	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1618	TRANSISTOR 2SC2785(F) or	QQSF02SC2785

Ref. No.	Description	Part No.
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1619	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1620	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
Q1621	TRANSISTOR 2SC2785(F) or	QQSF02SC2785
	TRANSISTOR KTC3199(GR) or	NQS10KTC3199
	TRANSISTOR 2SC1815-GR(TPE2)	QQS102SC1815
	RESISTORS	
R501	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R504	CARBON RES. 1/4W J 15k Ω	RCX4JATZ0153
R526	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R527	CARBON RES. 1/4W J 10M Ω	RCX4JATZ0106
R529	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R530	METAL OXIDE FILM RES. 1W J 1k Ω or	RN01102DP003
	METAL OXIDE FILM RES. 1W J 1k Ω	RN01102ZU001
R531⚠	METAL OXIDE FILM RES. 2W J 8.2 Ω or	RN028R2DP004
⚠	METAL OXIDE FILM RES. 2W J 8.2 Ω	RN028R2ZU001
R532	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R533	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R534	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R535	CARBON RES. 1/4W J 18k Ω	RCX4JATZ0183
R536	CARBON RES. 1/4W J 120k Ω	RCX4JATZ0124
R537	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R538	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R539	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R540	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R541	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R542	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R543	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R545	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R546	CARBON RES. 1/4W J 33k Ω	RCX4JATZ0333
R547	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R548	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R549	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R550	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R551	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R552	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R553	CARBON RES. 1/4W J 390k Ω	RCX4JATZ0394
R554	PCB JUMPER D0.6-P5.0	JW5.0T
R555	CARBON RES. 1/4W J 3.3k Ω	RCX4JATZ0332
R556	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R557	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R558	CARBON RES. 1/4W J 39k Ω	RCX4JATZ0393
R559	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R560	CARBON RES. 1/4W J 2.7k Ω	RCX4JATZ0272
R561	CARBON RES. 1/4W J 12k Ω	RCX4JATZ0123
R562	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R563	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R564	CARBON RES. 1/4W J 3.3 Ω	RCX4JATZ03R3
R565⚠	CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R566⚠	CARBON RES. 1/4W J 1 Ω	RCX4JATZ0010
R567⚠	CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R568⚠	CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R568A⚠	CARBON RES. 1/4W J 1.2 Ω	RCX4JATZ01R2
R570	CARBON RES. 1/4W J 1.2k Ω	RCX4JATZ0122
R571	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R572	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681

Ref. No.	Description	Part No.
R573	CARBON RES. 1/4W J 680 Ω	RCX4JATZ0681
R574	PCB JUMPER D0.6-P5.0	JW5.0T
R576	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R576A	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R577	CARBON RES. 1/4W J 150 Ω	RCX4JATZ0151
R579	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R580⚠	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R580A	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R581	CARBON RES. 1/4W J 470 Ω	RCX4JATZ0471
R582	CARBON RES. 1/4W J 10k Ω	RCX4JATZ0103
R583⚠	METAL OXIDE FILM RES. 2W J 6.8 Ω or	RN026R8DP004
⚠	METAL OXIDE FILM RES. 2W J 6.8 Ω	RN026R8ZU001
R584	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R585	CARBON RES. 1/4W J 6.8k Ω	RCX4JATZ0682
R586	PCB JUMPER D0.6-P5.0	JW5.0T
R587	CARBON RES. 1/4W J 82k Ω	RCX4JATZ0823
R588	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R589⚠	CARBON RES. 1/4W J 39 Ω	RCX4JATZ0390
R590	CARBON RES. 1/4W J 47 Ω	RCX4JATZ0470
R591⚠	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R592	CARBON RES. 1/4W J 150k Ω	RCX4JATZ0154
R593	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R594	CARBON RES. 1/4W J 68k Ω	RCX4JATZ0683
R595	CARBON RES. 1/4W J 220k Ω	RCX4JATZ0224
R597	CARBON RES. 1/4W J 470k Ω	RCX4JATZ0474
R598⚠	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R599	CARBON RES. 1/4W J 5.6k Ω	RCX4JATZ0562
R1617	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1618	CARBON RES. 1/4W J 390 Ω	RCX4JATZ0391
R1625	CARBON RES. 1/4W J 75 Ω	RCX4JATZ0750
R1626	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1627	CARBON RES. 1/4W J 2k Ω	RCX4JATZ0202
R1628	CARBON RES. 1/4W J 2.2k Ω	RCX4JATZ0222
R1629	CARBON RES. 1/4W J 220 Ω	RCX4JATZ0221
R1638	CARBON RES. 1/4W J 22 Ω	RCX4JATZ0220
R1646	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1647	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1649	CARBON RES. 1/4W J 4.7 Ω	RCX4JATZ04R7
R1650	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
R1651	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1652	CARBON RES. 1/4W J 180 Ω	RCX4JATZ0181
R1653	CARBON RES. 1/4W J 27 Ω	RCX4JATZ0270
R1655	PCB JUMPER D0.6-P5.0	JW5.0T
R1656	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1657	CARBON RES. 1/4W J 22k Ω	RCX4JATZ0223
R1659	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R1660	CARBON RES. 1/4W J 820 Ω	RCX4JATZ0821
R1661	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1664	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1665	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1666	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1667	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1668	CARBON RES. 1/4W J 1k Ω	RCX4JATZ0102
R1669	PCB JUMPER D0.6-P5.0	JW5.0T
R1671	CARBON RES. 1/4W G 18k Ω	RCX4GATZ0183
R1672	CARBON RES. 1/4W G 56k Ω	RCX4GATZ0563
R1673	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1674	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1675	CARBON RES. 1/4W J 47k Ω	RCX4JATZ0473
R1676	METAL OXIDE FILM RES. 2W J 3.9 Ω or	RN023R9DP004
	METAL OXIDE FILM RES. 2W J 3.9 Ω	RN023R9ZU001

Ref. No.	Description	Part No.
R1677	CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R1678	CARBON RES. 1/4W J 560 Ω	RCX4JATZ0561
R1679	CARBON RES. 1/4W J 1.8 Ω	RCX4JATZ01R8
R1684	CARBON RES. 1/4W G 220 Ω	RCX4GATZ0221
R1685	CARBON RES. 1/4W G 8.2k Ω	RCX4GATZ0822
R1686	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R1687	CARBON RES. 1/4W G 5.6k Ω	RCX4GATZ0562
R1688	CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153
R1689	CARBON RES. 1/4W J 3.9k Ω	RCX4JATZ0392
R1691	CARBON RES. 1/4W J 3.9 Ω	RCX4JATZ03R9
	MISCELLANEOUS	
BC501	BEAD INDUCTORS FBA04HA600VB-00	LLBF00STU026
BC1602	PCB JUMPER D0.6-P5.0	JW5.0T
BC1603	PCB JUMPER D0.6-P5.0	JW5.0T
BC1604	PCB JUMPER D0.6-P5.0	JW5.0T
CL501A	WIRE ASSEMBLY 3P 470MM	WX1TD600-003
DB2	X5-27V-HEAT SINK PIX ASSEMBLYT2001UB	0EM408929
DB5	X5-27H-HEAT SINK PIZ ASSEMBLYT2001UB	0EM408931
DL2	SCREW, B-TIGHT M3X8 BIND HEAD+	GBMB3080
JK1601	RCA JACK MSP-241V-05 PBSN W/O	JXRL010LY085
JS1601	PCB JUMPER D0.6-P5.0	JW5.0T
T571⚠	FLYBACK TRANSFORMER JF0501-2167 or	LTF00CPXB030
⚠	FLYBACK TRANS BSC24-2621S	LTF00CPS2061
T572A	HORIZONTAL DRAIVE TRANS CSA-LF327A	LTH00CPSA006
TP003	PCB JUMPER D0.6-P10.0	JW10.0T
TP501	PCB JUMPER D0.6-P10.0	JW10.0T
TP502	PCB JUMPER D0.6-P5.0	JW5.0T
TP503	PCB JUMPER D0.6-P5.0	JW5.0T
TP504	PCB JUMPER D0.6-P7.5	JW7.5T
TP505	PCB JUMPER D0.6-P5.0	JW5.0T
VR530	CARBON P.O.T. 30k Ω B	VRCB303HH014
VR531	CARBON P.O.T. 10k Ω B	VRCB103HH014

CRT CBA

Ref. No.	Description	Part No.
	CRT CBA (MPS-B) Consists of the following	--------
	CAPACITORS	
C504	CERAMIC CAP.(AX) B K 470pF/50V	CCA1JKT0B471
C505	CERAMIC CAP.(AX) B K 470pF/50V	CCA1JKT0B471
C506	CERAMIC CAP.(AX) B K 560pF/50V	CCA1JKT0B561
C508	ELECTROLYTIC CAP. 47µF/25V M or	CE1EMASDL470
	ELECTROLYTIC CAP. 47µF/25V M	CE1EMASTL470
C509	CERAMIC CAP. B K 1000pF/2KV or	CCD3DKP0B102
	CERAMIC CAP. B K 1000pF/2KV or	CA3D102MR030
	CERAMIC CAP. B K 1000pF/2KV	CCD3DKD0B102
C510	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL1R0
	ELECTROLYTIC CAP. 1µF/50V M or	CE1JMASDL010
	ELECTROLYTIC CAP. 1µF/50V M	CE1JMASTL1R0
	CONNECTORS	
CN501A	PIN CONNECTOR 005P-5100 or	JTEA001TG001
	CONNECTOR PIN, 1P LV or	1700576
	CONNECTOR PIN, 1P RT-01N-2.3A	1730688
	DIODES	
D501	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D502	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148
D503	SWITCHING DIODE 1SS133(T-77) or	QDTZ001SS133
	SWITCHING DIODE 1N4148	NDTZ001N4148

Ref. No.	Description	Part No.
	COIL	
L501	PCB JUMPER D0.6-P5.0	JW5.0T
	TRANSISTORS	
Q501	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619
Q502	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619
Q503	TRANSISTOR KTC3503Y or	NQWY0KTC3503
	TRANSISTOR 2SC3619	QQ9Z02SC3619
	RESISTORS	
R507	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R508	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R509	CARBON RES. 1/4W J 100 Ω	RCX4JATZ0101
R510	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R511	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R512	CARBON RES. 1/4W J 8.2k Ω	RCX4JATZ0822
R513	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R514	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R515	CARBON RES. 1/4W J 330 Ω	RCX4JATZ0331
R516⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103DP005
⚠	METAL RESISTOR 3W J 10k Ω	RN03103ZU001
R517⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103DP005
⚠	METAL RESISTOR 3W J 10k Ω	RN03103ZU001
R518⚠	FIXED METAL OXIDE FILM RES. 3W J 10k Ω or	RN03103DP005
⚠	METAL RESISTOR 3W J 10k Ω	RN03103ZU001
R519	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R520	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R521	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R522	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R523	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
R524	CARBON RES. 1/4W J 1.5k Ω	RCX4JATZ0152
	MISCELLANEOUS	
CL504A	LEAD WIRE 5P 400MM	WX1T6001-001
JK501⚠	CRT SOCKET ISHS40ST or	JSCC290PK006
⚠	CRT SOCKET HPS0521-012212	JSCC290HD012

FUNCTION CBA

Ref. No.	Description	Part No.
	FUNCTION CBA (MPS-C) Consists of the following	-------
	CONNECTORS	
CN1401	TWG CONNECTOR 07P TWG-P07X	JCTWA07TG001
CN1801	STRAIGHT CONNECTOR BASE 00 8283 0212 00 000 or	J383C02UG002
	STRAIGHT PIN HEADER, 2P 173981-2	1770258
	COILS	
L1801	PCB JUMPER D0.6-P5.0	JW5.0T
L1802	PCB JUMPER D0.6-P5.0	JW5.0T
	RESISTORS	
R1401	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R1402	CARBON RES. 1/4W G 1.5k Ω	RCX4GATZ0152
R1403	CARBON RES. 1/4W G 2.2k Ω	RCX4GATZ0222
R1404	CARBON RES. 1/4W G 2.7k Ω	RCX4GATZ0272
R1405	CARBON RES. 1/4W G 4.7k Ω	RCX4GATZ0472
R1406	CARBON RES. 1/4W G 6.8k Ω	RCX4GATZ0682
R1407	CARBON RES. 1/4W G 15k Ω	RCX4GATZ0153
	SWITCHES	
SW1401	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1402	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1403	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1404	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1405	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1406	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1407	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02
SW1408	TACT SWITCH SKQSAB or	SST0101AL038
	TACT SWITCH KSM0612B or	SST0101HH003
	TACT SWITCH TC-1104(H=5.0)	SST0101DNG02

JUNCTION CBA

Ref. No.	Description	Part No.
	JUNCTION CBA Consists of the following	--------
	CONNECTOR	
CN504	CONNECTOR, 5P TUC-P05X-B1	JCTUS05TG001

SERVICE MANUAL

MK12.5 Deck Mechanism Section

(U29: N224UFL/N226UFL)
(Z13: N2226FT/N2246FT)
(D5: N2240FL/N2260FL)
(X5: N2266FT)

VIDEO CASSETTE RECORDER

COLOR TV/VCR COMBINATION

DVD PLAYER & VIDEO CASSETTE RECORDER

COLOR TV/DVD/VCR

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VHS

IMPORTANT SAFETY NOTICE

Proper service and repair is important to the safe, reliable operation of all Funai Equipment. The service procedures recommended by Funai and described in this service manual are effective methods of performing service operations. Some of these service special tools should be used when and as recommended.

It is important to note that this service manual contains various CAUTIONS and NOTICES which should be carefully read in order to minimize the risk of personal injury to service personnel. The possibility exists that improper service methods may damage the equipment. It also is important to understand that these CAUTIONS and NOTICES ARE NOT EXHAUSTIVE. Funai could not possibly know, evaluate and advice the service trade of all conceivable ways in which service might be done or of the possible hazardous consequences of each way. Consequently, Funai has not undertaken any such broad evaluation. Accordingly, a servicer who uses a service procedure or tool which is not recommended by Funai must first use all precautions thoroughly so that neither his safety nor the safe operation of the equipment will be jeopardized by the service method selected.

STANDARD MAINTENANCE

Service Schedule of Components

H: Hours ○: Check ●: Change

Deck		Periodic Service Schedule			
Ref.No.	**Part Name**	**1,000 H**	**2,000 H**	**3,000 H**	**4,000 H**
B2	Cylinder Assembly	○	●	○	●
B3	Loading Motor Assembly			●	
B8	Pulley Assembly		●		●
B587	Tension Lever Assembly		●		●
B31	ACE Head Assembly			●	
B573, B574	Reel (SP)(D2), Reel (TU)(D2)			●	
B37	Capstan Motor		●		●
B52	Cap Belt		●		●
B73	FE Head			●	
B133, B134	Idler Gear, Idler Arm		●		●
B410	Pinch Arm(A) Assembly		●		●
B414	M Brake (SP) Assembly		●		●
B416	M Brake (TU) Assembly		●		●
B525	LDG Belt		●		●
B569 (2 head only)	Cam Holder		●		●
B593 (4 head, 4 head HiFi only)	Cam Holder Assembly		●		●

Notes:

1. Clean all parts for the tape transport (Upper Drum with Video Head / Pinch Roller / ACE Head / FE Head) using 90% Isopropyl Alcohol.
2. After cleaning the parts, do all DECK ADJUSTMENTS.
3. For the reference numbers listed above, refer to Deck Exploded Views.

Cleaning

Cleaning of Video Head

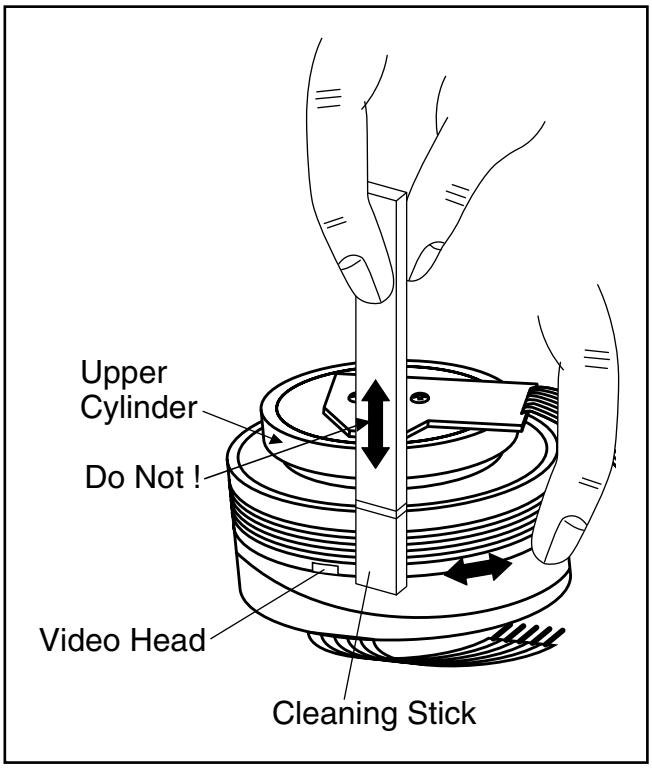
Clean the head with a head cleaning stick or chamois cloth.

Procedure

1. Remove the top cabinet.
2. Put on a glove (thin type) to avoid touching the upper and lower drum with your bare hand.
3. Put a few drops of 90% Isopropyl alcohol on the head cleaning stick or on the chamois cloth and, by slightly pressing it against the head tip, turn the upper drum to the right and to the left.

Notes:

1. The video head surface is made of very hard material, but since it is very thin, avoid cleaning it vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit.
3. Do not reuse a stained head cleaning stick or a stained chamois cloth.



Cleaning of ACE Head

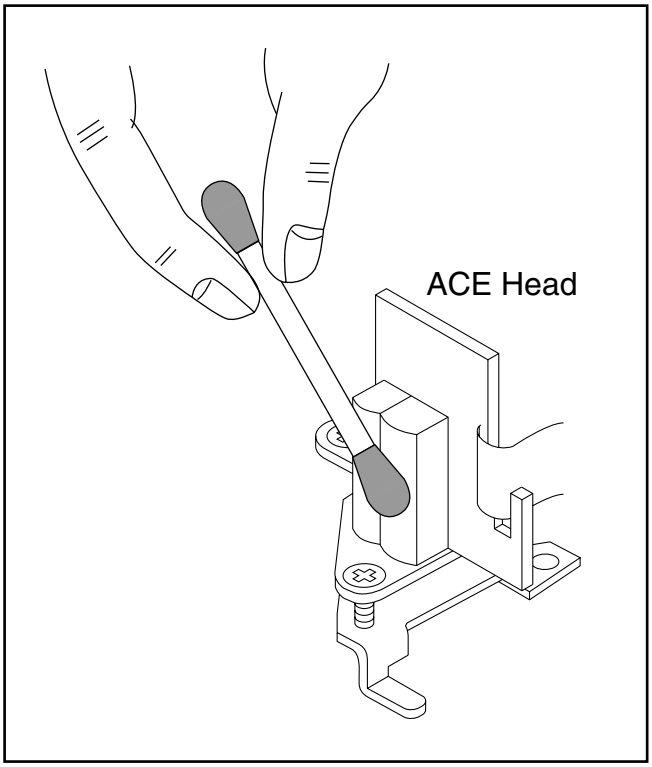
Clean the head with a cotton swab.

Procedure

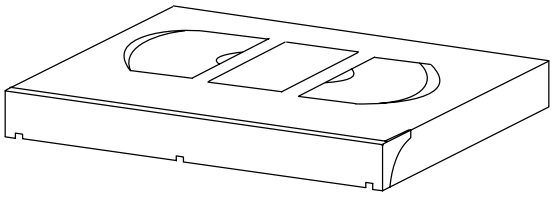
1. Remove the top cabinet.
2. Dip the cotton swab in 90% isopropyl alcohol and clean the ACE Head. Be careful not to damage the upper drum and other tape running parts.

Notes:

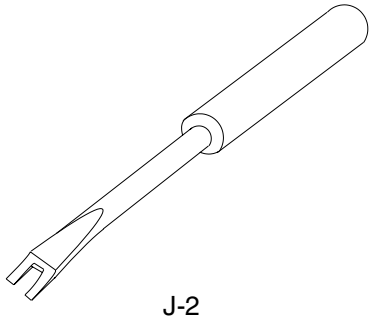
1. Avoid cleaning the ACE Head vertically.
2. Wait for the cleaned part to dry thoroughly before operating the unit or damage may occur.



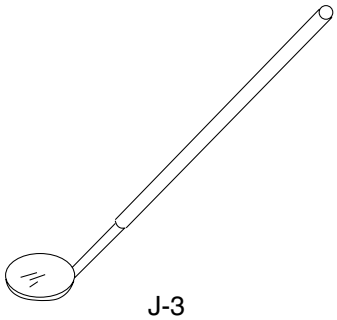
SERVICE FIXTURE AND TOOLS



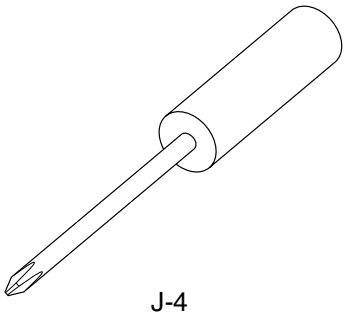
J-1-1, J-1-2



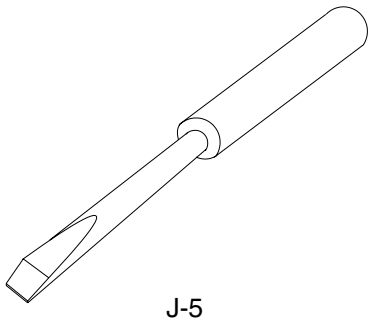
J-2



J-3



J-4



J-5

Ref. No.	Name	Part No.	Adjustment
J-1-1	Alignment Tape	FL8A	Head Adjustment of ACE Head
J-1-2	Alignment Tape	FL8N (2 Head only) FL8NW (4 Head only)	Azimuth and X Value Adjustment of ACE Head / Adjustment of Envelope Waveform
J-2	Guide Roller Adj. Screwdriver	Available Locally	Guide Roller
J-3	Mirror	Available Locally	Tape Transportation Check
J-4	Azimuth Adj. Screwdriver +	Available Locally	ACE Head Height
J-5	Flat Screwdriver -	Available Locally	X Value

MECHANICAL ALIGNMENT PROCEDURES

Explanation of alignment for the tape to correctly run starts on the next page. Refer to the information below on this page if a tape gets stuck, for example, in the mechanism due to some electrical trouble of the unit.

Service Information

A. Method for Manual Tape Loading/Unloading

To load a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Insert a cassette tape. Though the tape will not be automatically loaded, make sure that the cassette tape is all the way in at the inlet of the Cassette Holder. To confirm this, lightly push the cassette tape further in and see if the tape comes back out, by a spring motion, just as much as you have pushed in.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 for a minute or two to complete this task.

To unload a cassette tape manually:

1. Disconnect the AC plug.
2. Remove the Top Case and Front Assembly.
3. Make sure that the Moving guide preparations are in the Eject Position.
4. Turn the LDG Belt in the appropriate direction shown in Fig. M1 until the Moving guide preparations come to the Eject Position. Stop turning when the preparations begin clicking or can not be moved further. However, the tape will be left wound around the cylinder.
5. Turn the LDG Belt in the appropriate direction continuously, and the cassette tape will be ejected. Allow a minute or two to complete this task.

B. Method to place the Cassette Holder in the tape-loaded position without a cassette tape

1. Disconnect the AC Plug.
2. Remove the Top Case and Front Assembly.
3. Turn the LDG Belt in the appropriate direction shown in Fig. M1. Release the locking tabs shown in Fig. M1 and continue turning the LDG Belt until the Cassette Holder comes to the tape-loaded position. Allow a minute or two to complete this task.

Top View

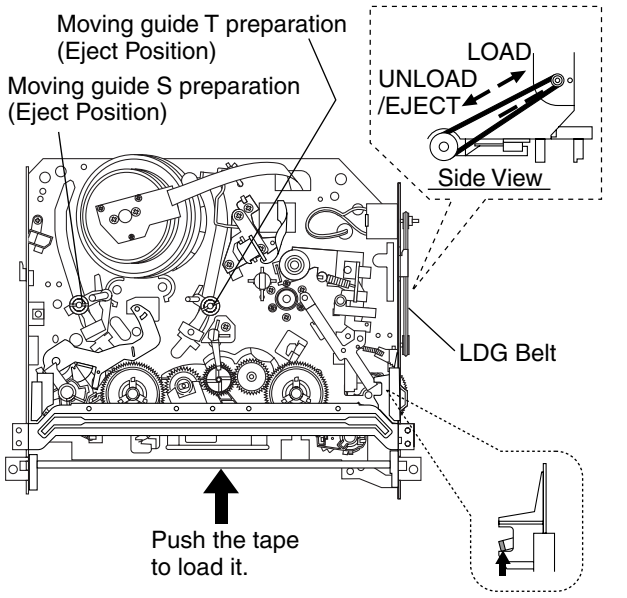


Fig. M1

Bottom View

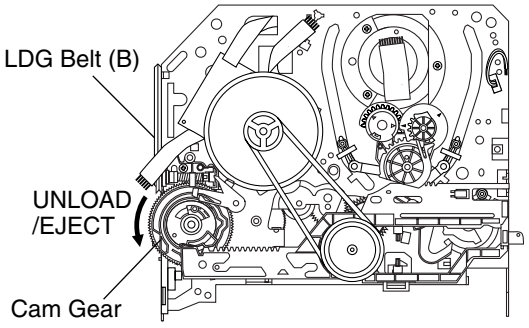


Fig. M2

1. Tape Interchangeability Alignment

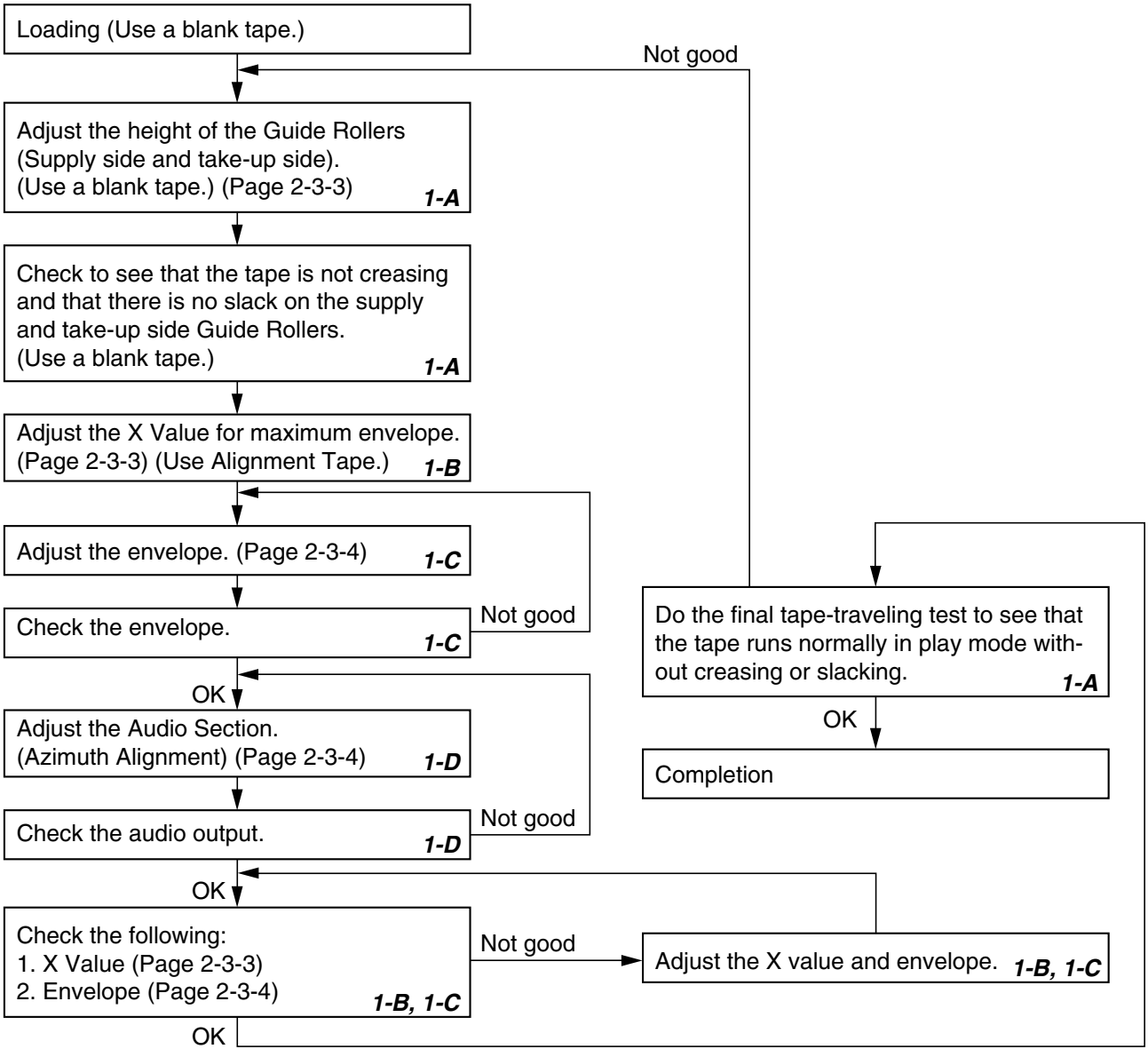
Note:
To do these alignment procedures, make sure that the Tracking Control Circuit is set to the preset position every time a tape is loaded or unloaded. (Refer to page 2-3-4, procedure 1-C, step 2.)

Equipment required:

Dual Trace Oscilloscope
VHS Alignment Tape
(FL8N --- 2 head model, FL8NW --- 4 head model)
Guide Roller Adj. Screwdriver
Flat Screwdriver (Purchase Locally)

Note: Before starting this Mechanical Alignment, do all Electrical Adjustment procedures.

Flowchart of Alignment for tape traveling


Loading (Use a blank tape.)
Not good
Adjust the height of the Guide Rollers (Supply side and take-up side). (Use a blank tape.) (Page 2-3-3) 1-A
Check to see that the tape is not creasing and that there is no slack on the supply and take-up side Guide Rollers. (Use a blank tape.) 1-A
Adjust the X Value for maximum envelope. (Page 2-3-3) (Use Alignment Tape.) 1-B
Adjust the envelope. (Page 2-3-4) 1-C
Check the envelope. 1-C
Not good
OK
Adjust the Audio Section. (Azimuth Alignment) (Page 2-3-4) 1-D
Check the audio output. 1-D
Not good
OK
Check the following:
1. X Value (Page 2-3-3)
2. Envelope (Page 2-3-4) 1-B, 1-C
Not good
Adjust the X value and envelope. 1-B, 1-C
OK
Do the final tape-traveling test to see that the tape runs normally in play mode without creasing or slacking. 1-A
OK
Completion

1-A. Preliminary/Final Checking and Alignment of Tape Path

Purpose:

To make sure that the tape path is well stabilized.

Symptom of Misalignment:

If the tape path is unstable, the tape will be damaged.

Note: Do not use an Alignment Tape for this procedure. If the unit is not correctly aligned, the tape may be damaged.

1. Playback a blank cassette tape and check to see that the tape runs without creasing at Guide Rollers [2] and [3], and at points A and B on the lead surface. (Refer to Fig. M3 and M4.)
2. If creasing is apparent, align the height of the guide rollers by turning the top of Guide Rollers [2] and [3] with a Guide Roller Adj. Screwdriver. (Refer to Fig. M3 and M5.)

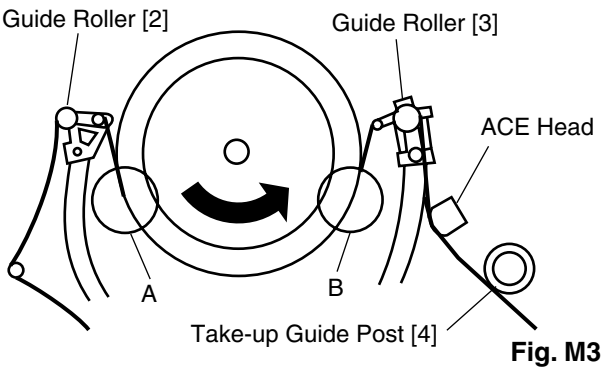


Fig. M3

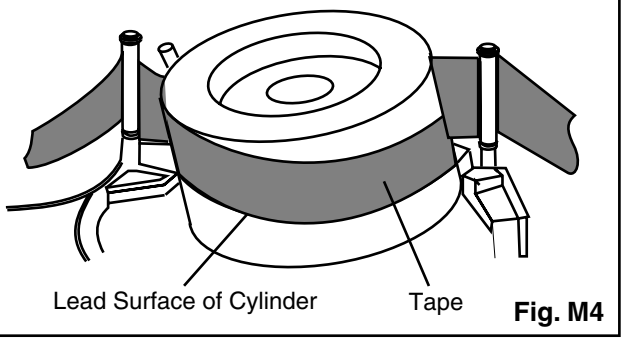


Fig. M4

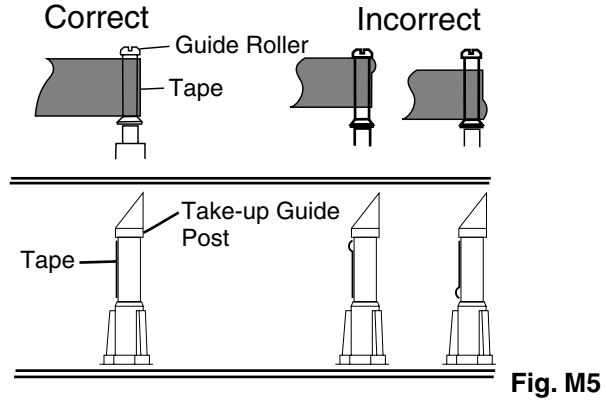


Fig. M5

3. Check to see that the tape runs without creasing at Take-up Guide Post [4] or without snaking between Guide Roller [3] and ACE Head. (Fig. M3 and M5)
4. If creasing or snaking is apparent, adjust the Tilt Adj. Screw of the ACE Head. (Fig. M6)

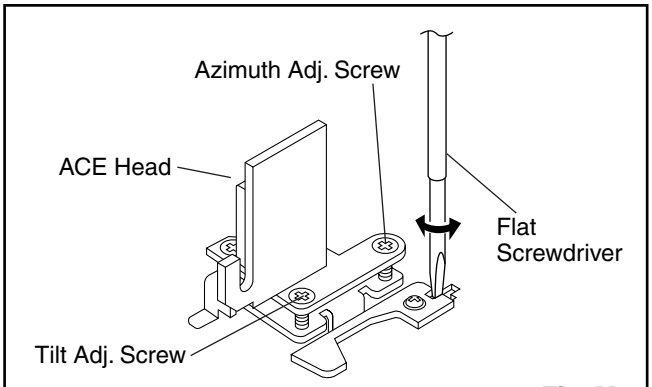


Fig. M6

1-B. X Value Alignment

Purpose:

To obtain maximum PB FM envelope signal at the preset position of the Tracking Control Circuit, align the Horizontal Position of the ACE Head.

Symptom of Misalignment:

If the Horizontal Position of the ACE Head is not properly aligned, maximum PB FM envelope cannot be obtained at the preset position of the Tracking Control Circuit.

1. Connect the oscilloscope to TP (C-PB and CTL) on the Main CBA. Use TP (RF-SW) as a trigger.
2. Playback the Gray Scale of the Alignment Tape (FL8N --- 2 head model, FL8NW --- 4 head model) and confirm that the PB FM signal is present.
3. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit then “PLAY” button on the unit. (Refer to note on bottom of page 2-3-4.)
4. Use the Flat Screwdriver so that the PB FM signal at TP (C-PB) is maximum. (Fig. M6)

5. To shift the CTL waveform, press CH UP or CH DOWN button on the remote control unit. Then make sure that the maximum output position of PB FM envelope signal become within ±2ms from preset position.

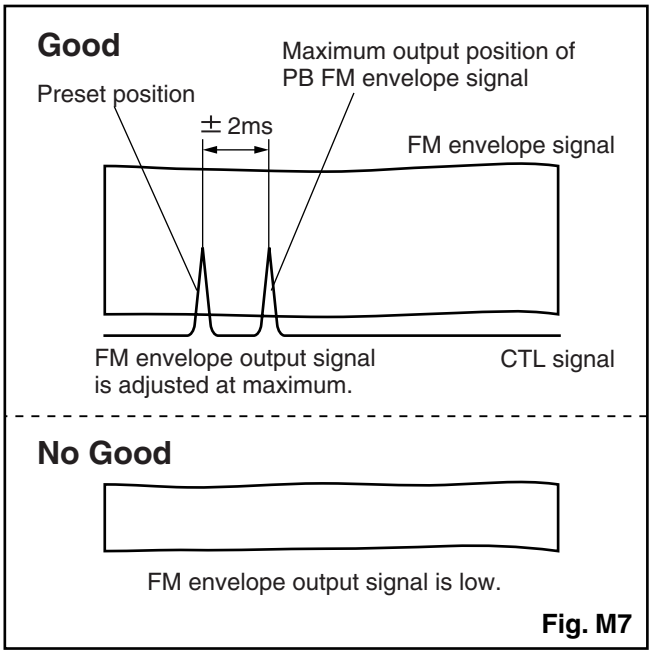


Fig. M7

6. Set the Tracking Control Circuit to the preset position by pressing CH UP button on the remote control unit. and then “PLAY” button.

1-C. Checking/Adjustment of Envelope Waveform

Purpose:

To achieve a satisfactory picture, adjust the PB FM envelope becomes as flat as possible.

Symptom of Misalignment:

If the envelope output is poor, noise will appear in the picture. The tracking will then lose precision and the playback picture will be distorted by any slight variation of the Tracking Control Circuit.

1. Connect the oscilloscope to TP (C-PB) on the Main CBA. Use TP (RF-SW) as a trigger.
2. Playback the Gray Scale on the Alignment Tape (FL8N --- 2 head model, FL8NW --- 4 head model). Set the Tracking Control Circuit to the preset position by pressing CH UP button and then “PLAY” button on the unit. Adjust the height of Guide Rollers [2] and [3] (Fig. M3, Page 2-3-3) watching the oscilloscope display so that the envelope becomes as flat as possible. To do this adjustment, turn the top of the Guide Roller with the Guide Roller Adj. Screwdriver.
3. If the envelope is as shown in Fig. M7, adjust the height of Guide Roller [2] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
4. If the envelope is as shown in Fig. M8, adjust the height of Guide Roller [3] (Refer to Fig. M3) so that the waveform looks like the one shown in Fig. M9.
5. When Guide Rollers [2] and [3] (Refer to Fig. M3) are aligned properly, there is no envelope drop either at the beginning or end of track as shown in Fig. M9.

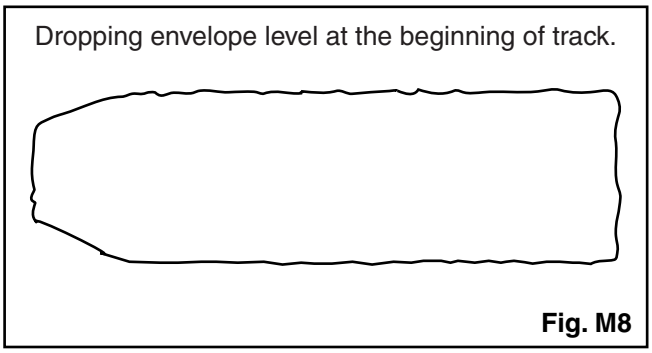


Fig. M8

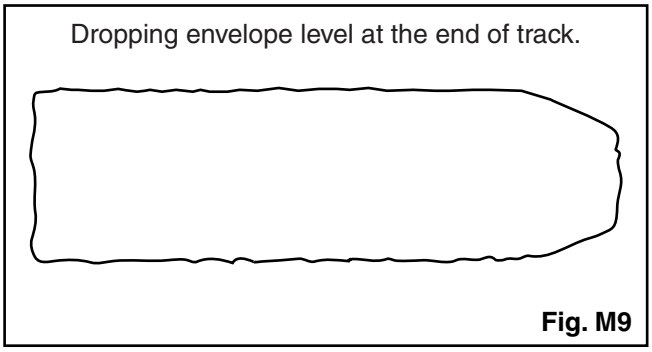


Fig. M9

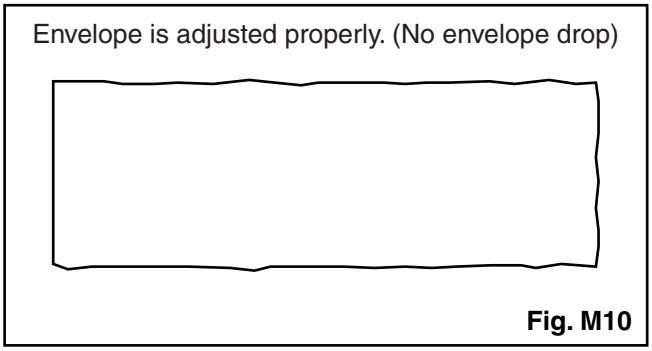


Fig. M10

Note: Upon completion of the adjustment of Guide Rollers [2] and [3] (Refer to Fig. M3), check the X Value by pushing the CH UP or DOWN buttons alternately, to check the symmetry of the envelope. Check the number of pushes to ensure preset position. The number of pushes CH UP button to achieve 1/2 level of envelope should match the number of pushes CH DOWN button from center. If required, redo the “X Value Alignment.”

1-D. Azimuth Alignment of Audio/Control/ Erase Head

Purpose:

To correct the Azimuth alignment so that the Audio/ Control/Erase Head meets tape tracks properly.

Symptom of Misalignment:

If the position of the Audio/Control/Erase Head is not properly aligned, the Audio S/N Ratio or Frequency Response will be poor.

1. Connect the oscilloscope to the audio output jack on the rear side of the deck.
2. Playback the alignment tape (FL8N --- 2 head model, FL8NW --- 4 head model) and confirm that the audio signal output level is 8kHz.
3. Adjust Azimuth Adj. Screw so that the output level on the AC Voltmeter or the waveform on the oscilloscope is at maximum. (Fig. M6)

DISASSEMBLY/ASSEMBLY PROCEDURES OF DECK MECHANISM

Before following the procedures described below, be sure to remove the deck assembly from the cabinet. (Refer to CABINET DISASSEMBLY INSTRUCTIONS of Main Section.)
All the following procedures, including those for adjustment and replacement of parts, should be done in Eject mode; see the positions of [41] and [42] in Fig. DM1 on page 2-4-3. When reassembling, follow the steps in reverse order.

Comparison Chart of Models and Marks

Model	Mark
N2226FT	A
N224UFL	B
N2240FL	C
N2246FT	D
N226UFL	E
N2260FL	F
N2266FT	G

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[1]	[1]	Guide Holder A	T	DM3	2(S-1)	
[2]	[1]	Cassette Holder Assembly	T	DM4	(S-10) --- **[A,D,G]**	
[3]	[2]	Slider (SP)	T	DM5	(S-1A), *(L-1)	
[4]	[2]	Slider (TU)	T	DM5	*(L-2)	
[5]	[4]	Lock Lever	T	DM5	*(L-3), *(P-1)	
[6]	[2]	Cassette Plate	T	DM5		
[7]	[7]	Cylinder Assembly	T	DM1, DM6	Desolder, 3(S-2)	
[8]	[8]	Loading Motor Assembly	T	DM1, DM7	Desolder, LDG Belt, 2(S-3)	
[9]	[9]	ACE Head Assembly	T	DM1, DM7	(S-4)	
[10]	[2]	Tape Guide Arm Assembly	T	DM1, DM8-1	*(P-2)	
[11]	[10]	C Door Opener	T	DM1, DM8-1	(S-4A), *(L-4)	
[12]	[11]	Pinch Arm (B)	T	DM1, DM8-1, DM8-2	*(P-3)	
[13]	[12]	Pinch Arm (A) Assembly	T	DM1, DM8-1, DM8-2		
[14]	[14]	FE Head	T	DM1, DM9	(S-5)	
[15]	[15]	Prism	T	DM1, DM9	(S-6)	
[16]	[2],[15]	Sensor Gear	T	DM1, DM9		
[17]	[2]	Slider Shaft	T	DM10	*(L-5)	
[18]	[17]	C Drive Lever (SP)	T	DM10		
[19]	[17]	C Drive Lever (TU)	T	DM10	(S-7), *(P-4)	
[20]	[7],[8], [10]	Capstan Motor	B	DM2, DM11	3(S-8), Cap Belt	
[21]	[21]	Clutch Assembly	B	DM2, DM12	(C-1)	

STEP /LOC. No.	START-ING No.	PART		REMOVAL		INSTALLATION
				Fig. No.	REMOVE/*UNHOOK/ UNLOCK/RELEASE/ UNPLUG/DESOLDER	ADJUSTMENT CONDITION
[22]	[22]	Cam Holder(F) --- **[A]** Cam Holder Assembly --- **[B,C,D,E,F,G]**	B	DM2, DM12	*(L-6)	
[23]	[23]	Cam Gear (B)	B	DM2, DM12	(C-2), *(P-5)	
[24]	[24]	Mode Gear	B	DM2, DM13-1	(C-3)	
[25]	[21],[23], [24]	Mode Lever	B	DM2, DM13-1, DM13-2	(C-4), *(L-8)	
[26]	[22]	Worm Holder	B	DM2, DM13-1	(S-9), *(L-9), *(L-10)	
[27]	[26]	Pulley Assembly	B	DM2, DM13-1		
[28]	[25],[26]	Cam Gear (A)	B	DM2, DM13-1, DM13-2		
[29]	[25]	Idler Gear	B	DM1, DM14		
[30]	[29]	Idler Arm	B	DM1, DM14	*(L-11)	
[31]	[25]	BT Arm	B	DM2, DM14	*(P-6)	
[32]	[25]	Loading Arm (SP) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[33]	[32]	Loading Arm (TU) Assembly	B	DM2, DM14		(+)Refer to Alignment Sec.Page 2-5-1
[34]	[2],[25]	M Brake (TU) Assembly	T	DM1, DM15	*(P-7), Brake Belt	
[35]	[2],[25]	M Brake (SP) Assembly	T	DM1, DM15	*(P-8)	
[36]	[35]	Tension Lever Assembly	T	DM1, DM15		
[37]	[36]	T Lever Holder	T	DM15	*(L-12)	
[38]	[34]	Reel (TU)(D2)	T	DM1, DM15		
[39]	[38]	M Gear	T	DM1, DM15		
[40]	[36]	Reel (SP)(D2)	T	DM1, DM15		
[41]	[32],[36]	Moving Guide S Preparation	T	DM1, DM16		
[42]	[33]	Moving Guide T Preparation	T	DM1, DM16		
[43]	[19]	TG Post Assembly	T	DM1, DM16	*(L-13)	
[44]	[28]	Rack Assembly	R	DM17		(+)Refer to Alignment Sec.Page 2-5-1
[45]	[44]	F Door Opener	R	DM17	*(P-9) --- **[A,D,G]**	
[46]	[46]	Cleaner Assembly	T	DM1, DM6		
[47]	[46]	CL Post	T	DM6	*(L-14)	
↓ (1)	↓ (2)	↓ (3)	↓ (4)	↓ (5)	↓ (6)	↓ (7)

(1): Follow steps in sequence. When reassembling, follow the steps in reverse order.
These numbers are also used as identification (location) No. of parts in the figures.
(2): Indicates the part to start disassembling with in order to disassemble the part in column (1).
(3): Name of the part
(4): Location of the part: T=Top B=Bottom R=Right L=Left
(5): Figure Number
(6): Identification of parts to be removed, unhooked, unlocked, released, unplugged, unclamped, or desoldered.
P=Spring, W=Washer, C=Cut Washer, S=Screw, *=Unhook, Unlock, Release, Unplug, or Desolder
e.g., 2(L-2) = two Locking Tabs (L-2).
(7): Adjustment Information for Installation
(+):Refer to Deck Exploded Views for lubrication.

Top View

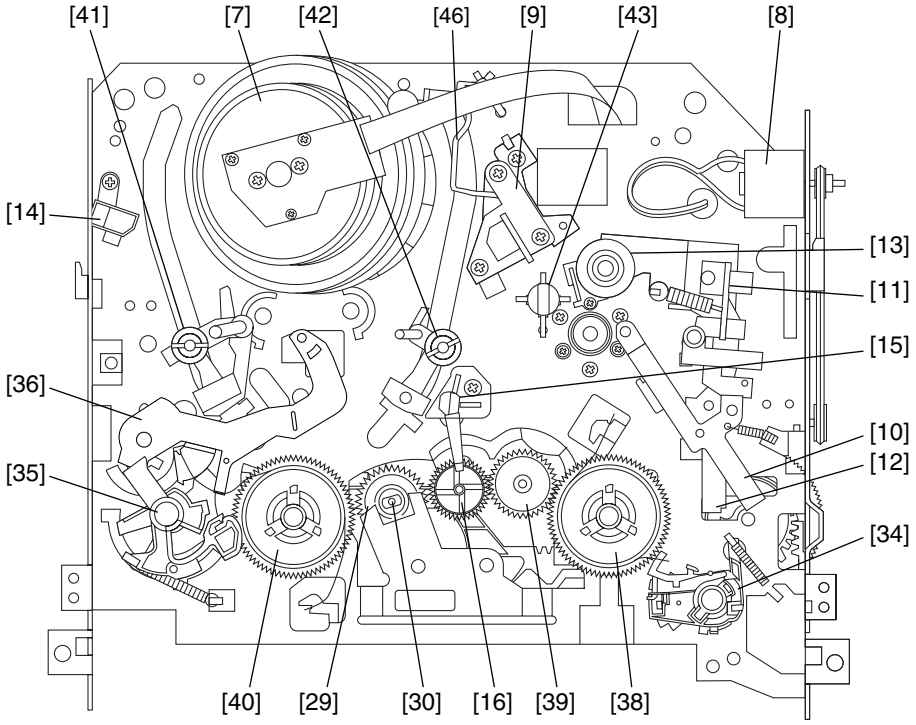


Fig. DM1

Bottom View

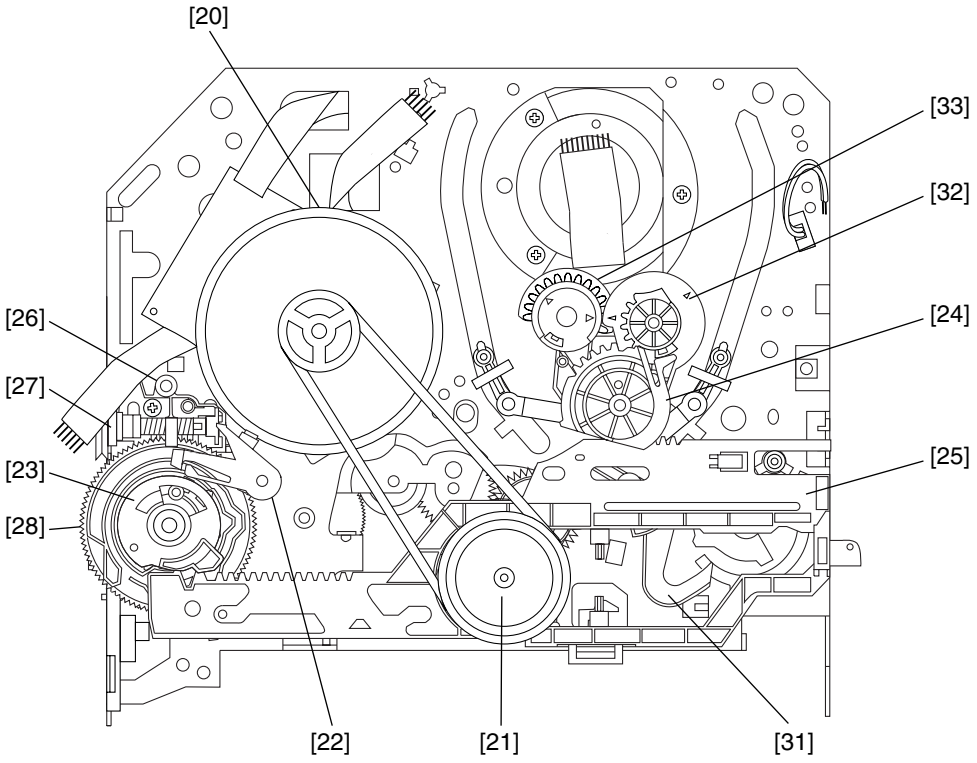


Fig. DM2

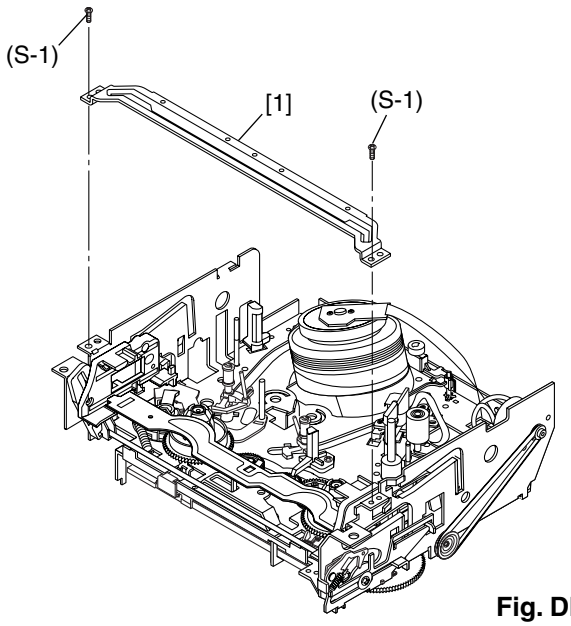
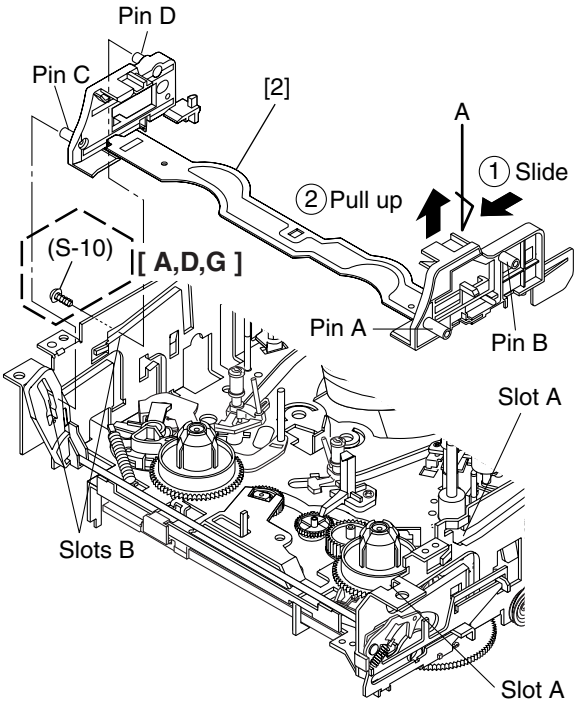


Fig. DM3



First, while pushing the locking tab as shown at right, slide and pull up the right side on [2] to release Pin A and Pin B from the slots A.
Then, remove Pin C and Pin D on [2] from the slots B as shown.

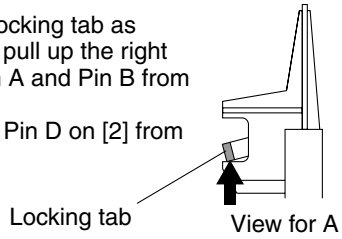
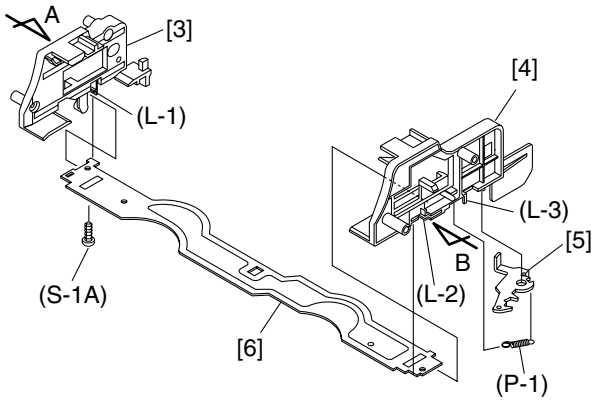
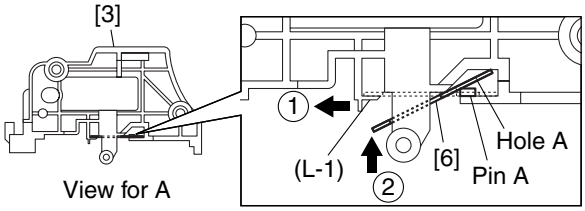


Fig. DM4



Installation of [3] and [6]

First, insert [6] diagonally in [3] as shown below. Then, install [6] in [3] while pushing (L-1) in a direction of arrow. After installing [6] in [3], confirm that pin A of [3] enters hole A of [6] properly.



Installation of [4] and [6]

Install [6] in [4] while pulling (L-2) in a direction of arrow. After installing [6] in [4], confirm that pin B of [4] enters hole B of [6] properly.

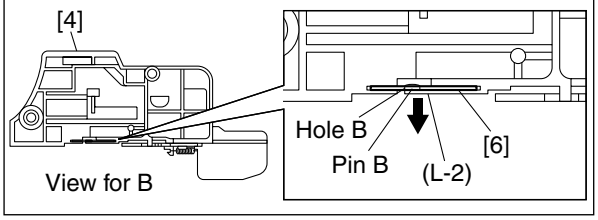


Fig. DM5

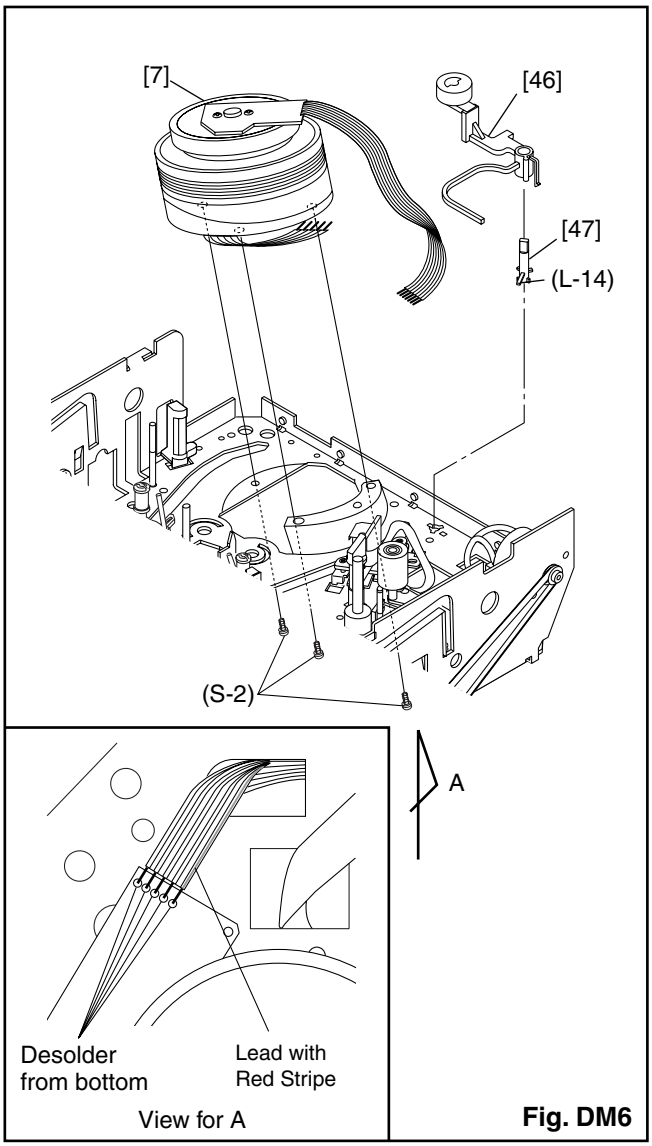


Fig. DM6

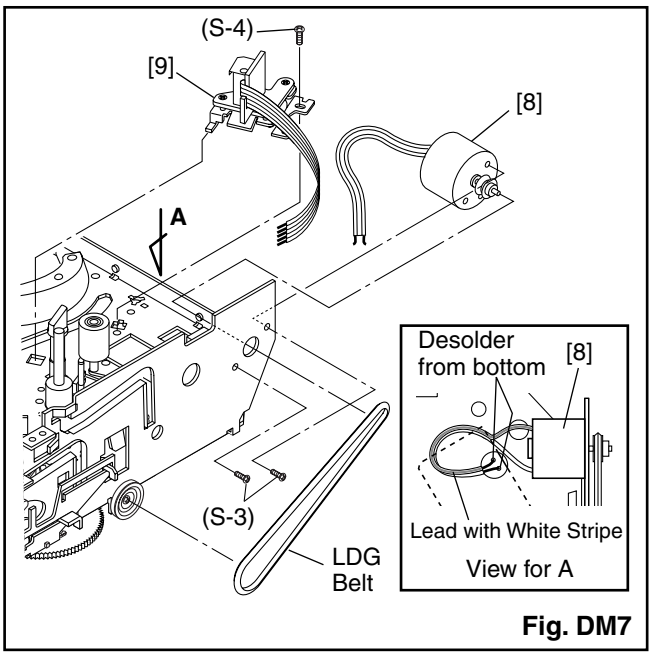


Fig. DM7

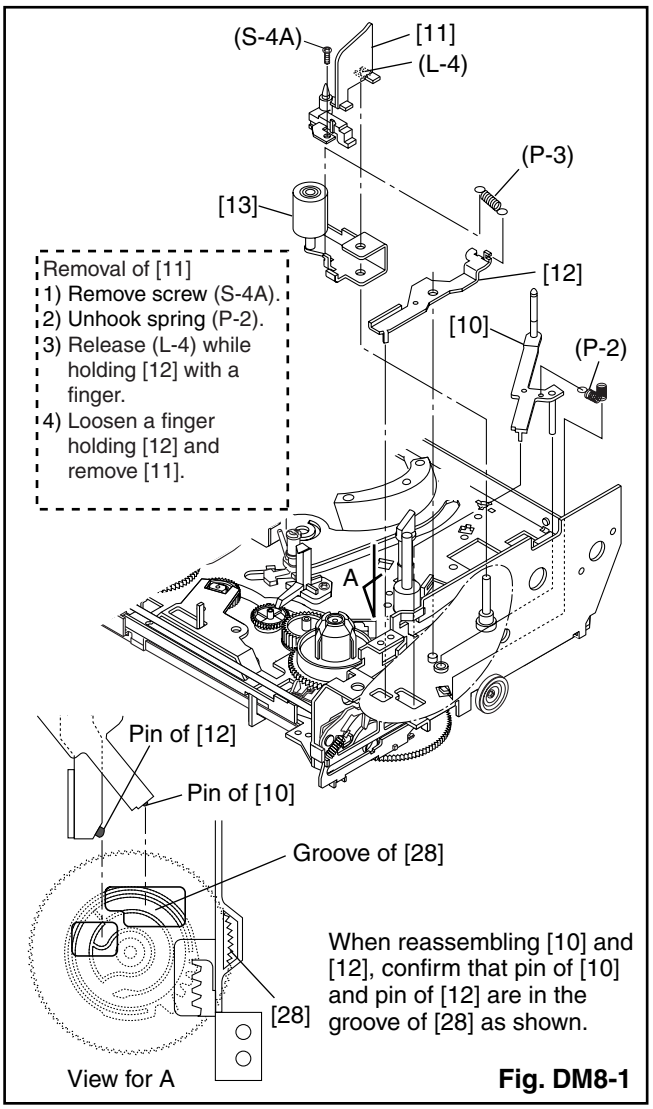


Fig. DM8-1

Installation of [13] and [12]

Hook spring (P-3) up to [12] and [13], then install then to the specified position so that [12] will be floated slightly while holding [12] and [13]. (Refer to Fig. A.)

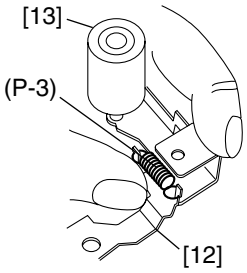


Fig. A

Install pin of [12] in groove of [28]. (Refer to Fig. B.)

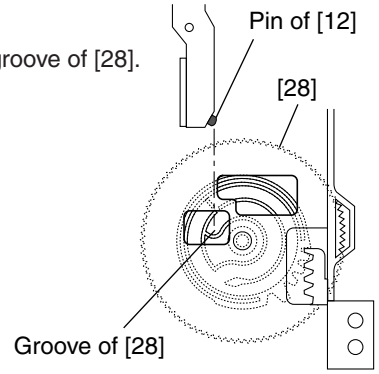


Fig. B (Top view)

Hold [12] and [13] till groove of pin of chassis looks and fit [13] in notch of chassis. Then, turn a few [13] while holding [12]. (Refer to Fig. C.)

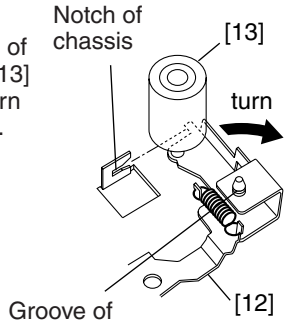


Fig. C

Install [11] and [10] while holding [12]. (Refer to Fig. DM8-1.)

Fig. DM8-2

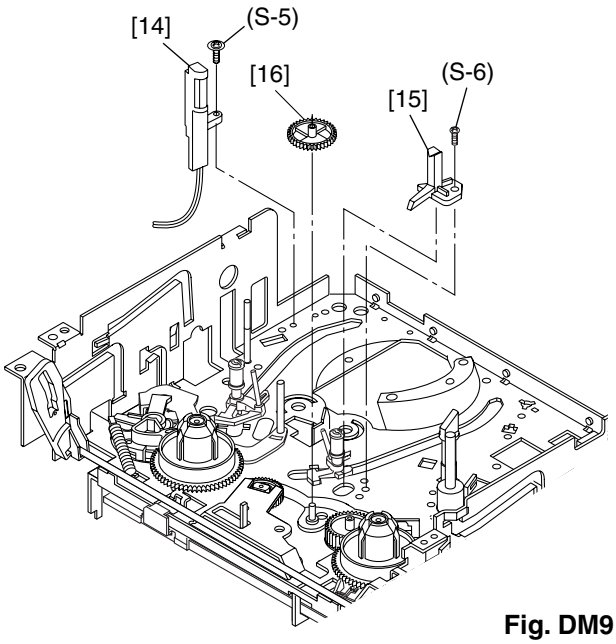


Fig. DM9

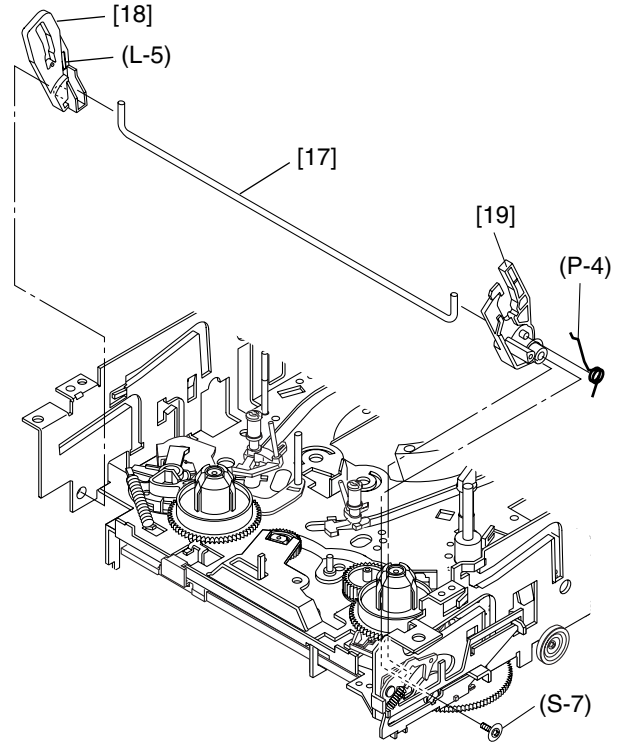
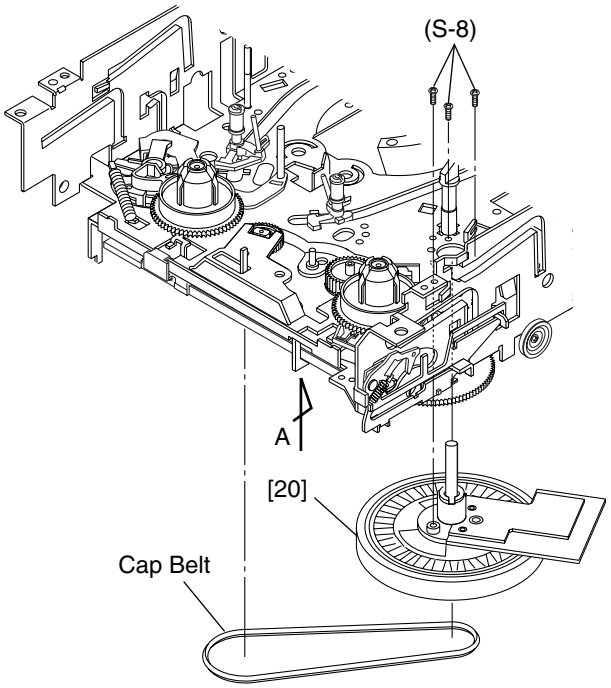
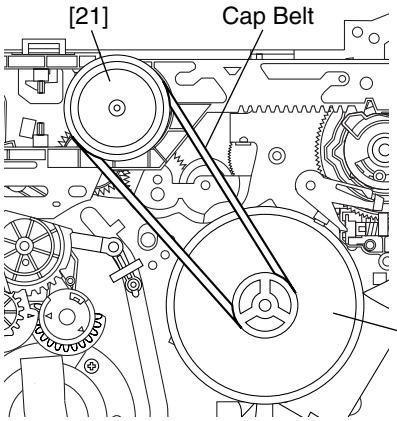


Fig. DM10

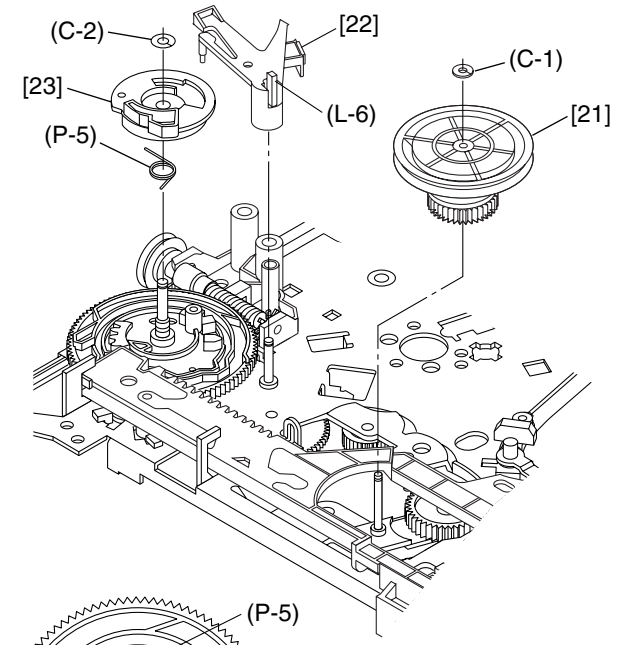


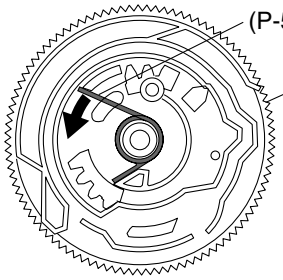
Installation position of Cap Belt



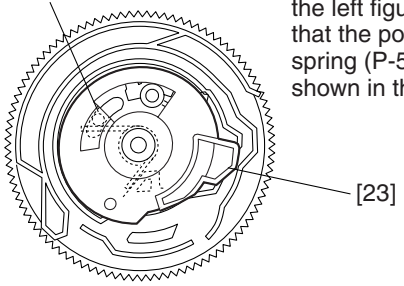
View for A

Fig. DM11



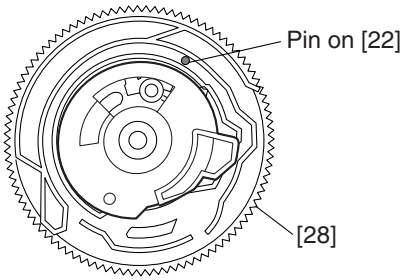


Pin on bottom of [23]



Top View

When installing [23], install the spring (P-5) to [28] as shown in the left figure, and then install [23] while pressing the spring (P-5) to the direction of the arrow in the left figure and confirming that the position of the spring (P-5) is placed as shown in the left figure.



Position of pin on [22]

Fig. DM12

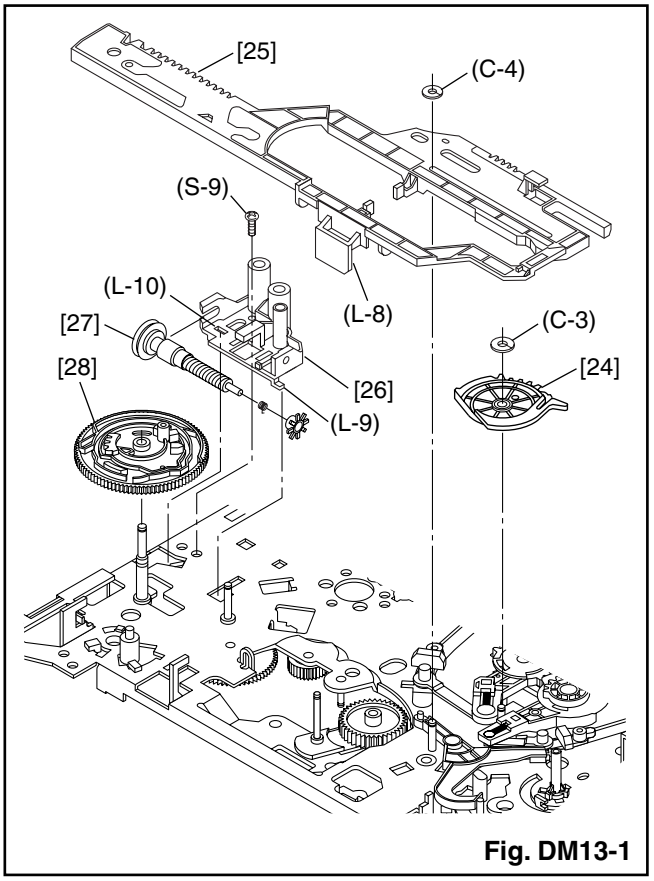
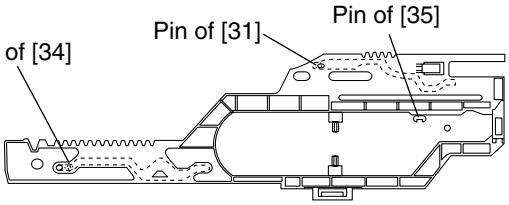
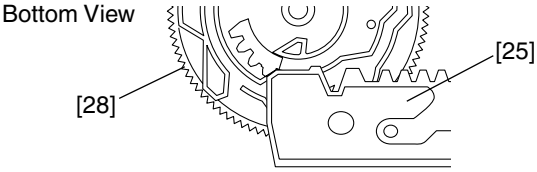


Fig. DM13-1

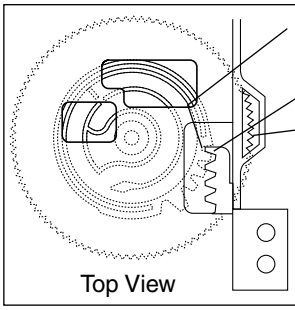
Installation of [25]

Position of Mode Lever when installed





Align [25] and [28] as shown.



When reassembling [28], align the first groove on [28] to the first tooth on [44] as shown.

Fig. DM13-2

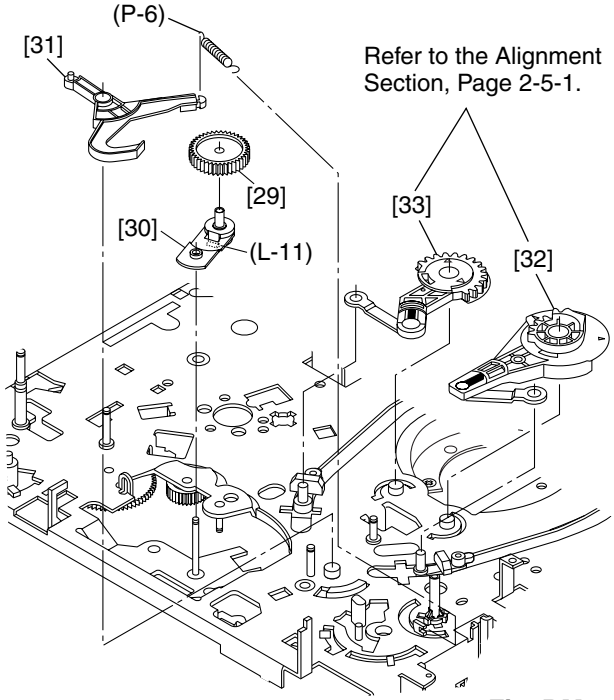


Fig. DM14

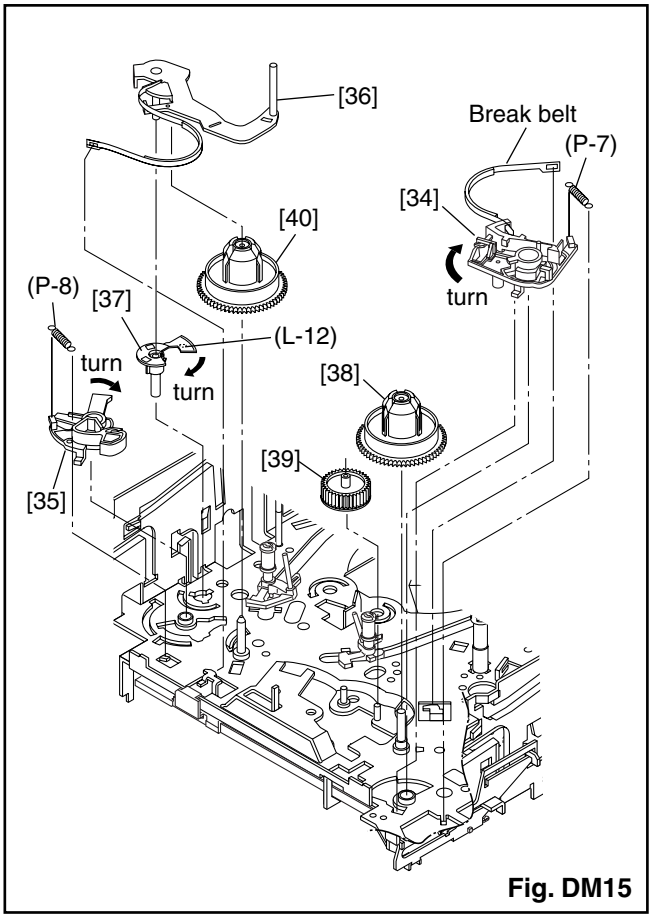


Fig. DM15

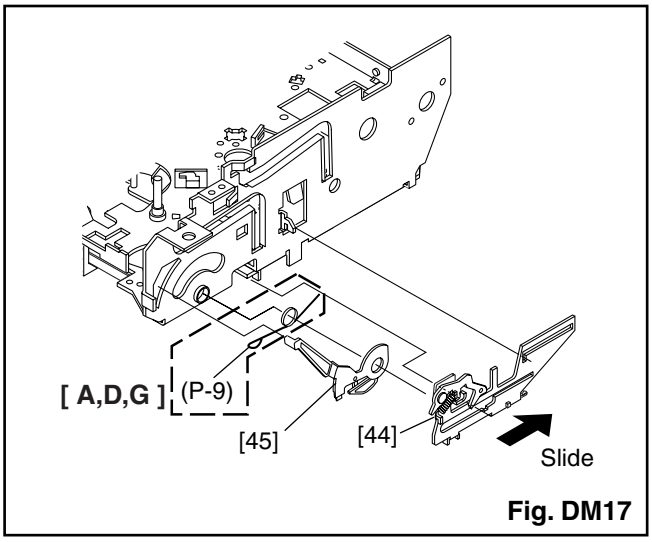


Fig. DM17

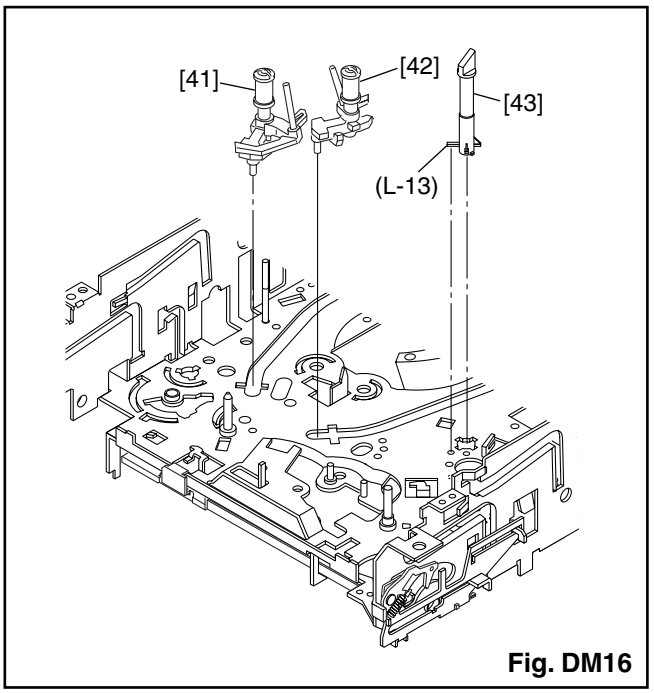


Fig. DM16

ALIGNMENT PROCEDURES OF MECHANISM

The following procedures describe how to align the individual gears and levers that make up the tape loading/unloading mechanism. Since information about the state of the mechanism is provided to the System Control Circuit only through the Mode Switch, it is essential that the correct relationship between individual gears and levers be maintained.

All alignments are to be performed with the mechanism in Eject mode, in the sequence given. Each procedure assumes that all previous procedures have been completed.

IMPORTANT:

If any one of these alignments is not performed properly, even if off by only one tooth, the unit will unload or stop and it may result in damage to the mechanical or electrical parts.

Alignment points in Eject Position

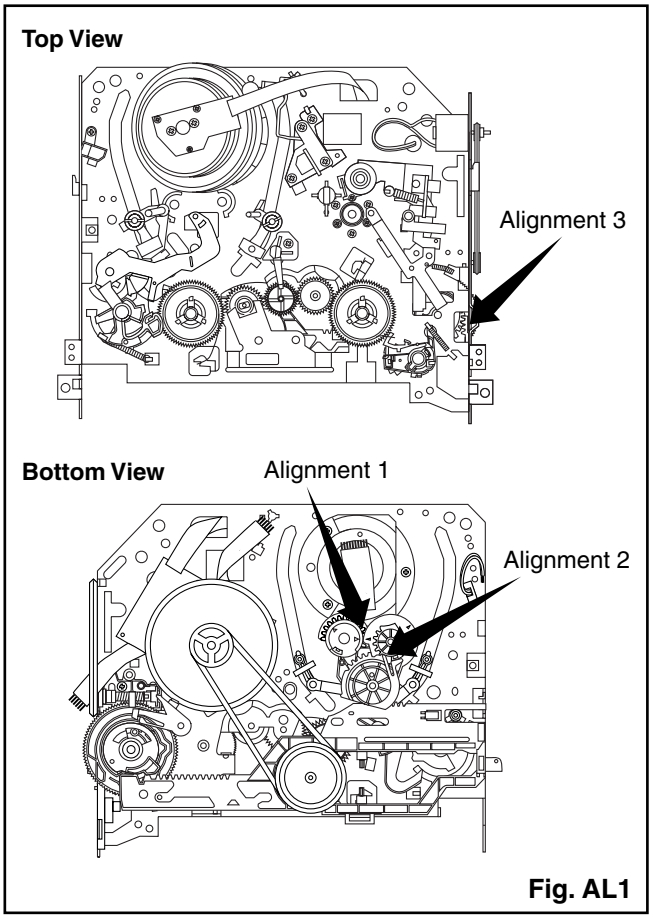


Fig. AL1

Alignment 1

Loading Arm (SP) and (TU) Assembly

Install Loading Arm (SP) and (TU) Assembly so that their triangle marks point to each other as shown in Fig. AL2.

Alignment 2

Mode Gear

Keeping the two triangles pointing at each other, install the Loading Arm (SP) Assembly so that the last tooth of the gear meets the most inside teeth of the Mode Gear. See Fig. AL2.

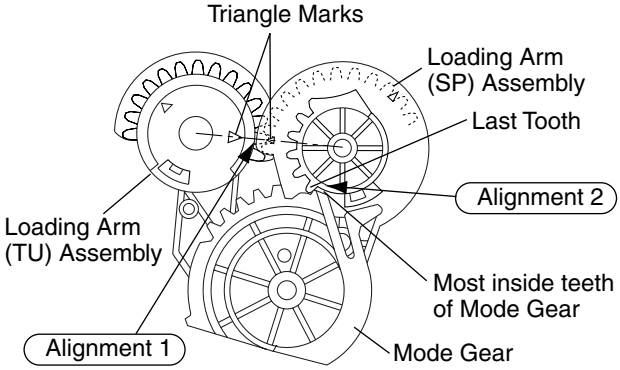


Fig. AL2

Alignment 3

Cam Gear (A), Rack Assembly

Install the Rack Assembly so that the first tooth on the gear of the Rack Assembly meets the first groove on the Cam Gear (A) as shown in Fig. AL3.

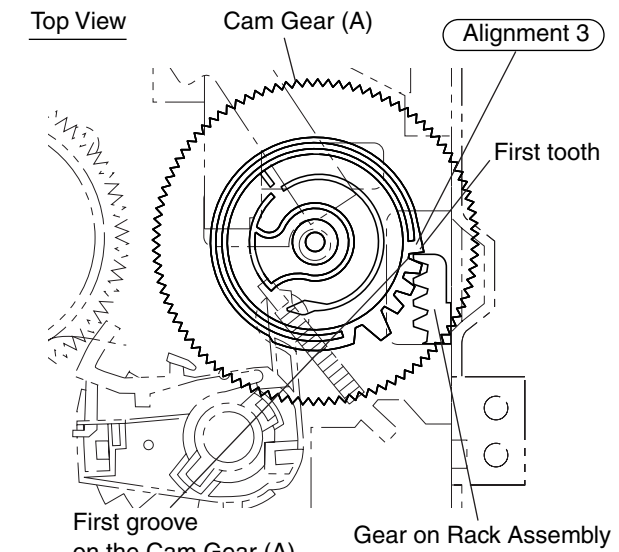
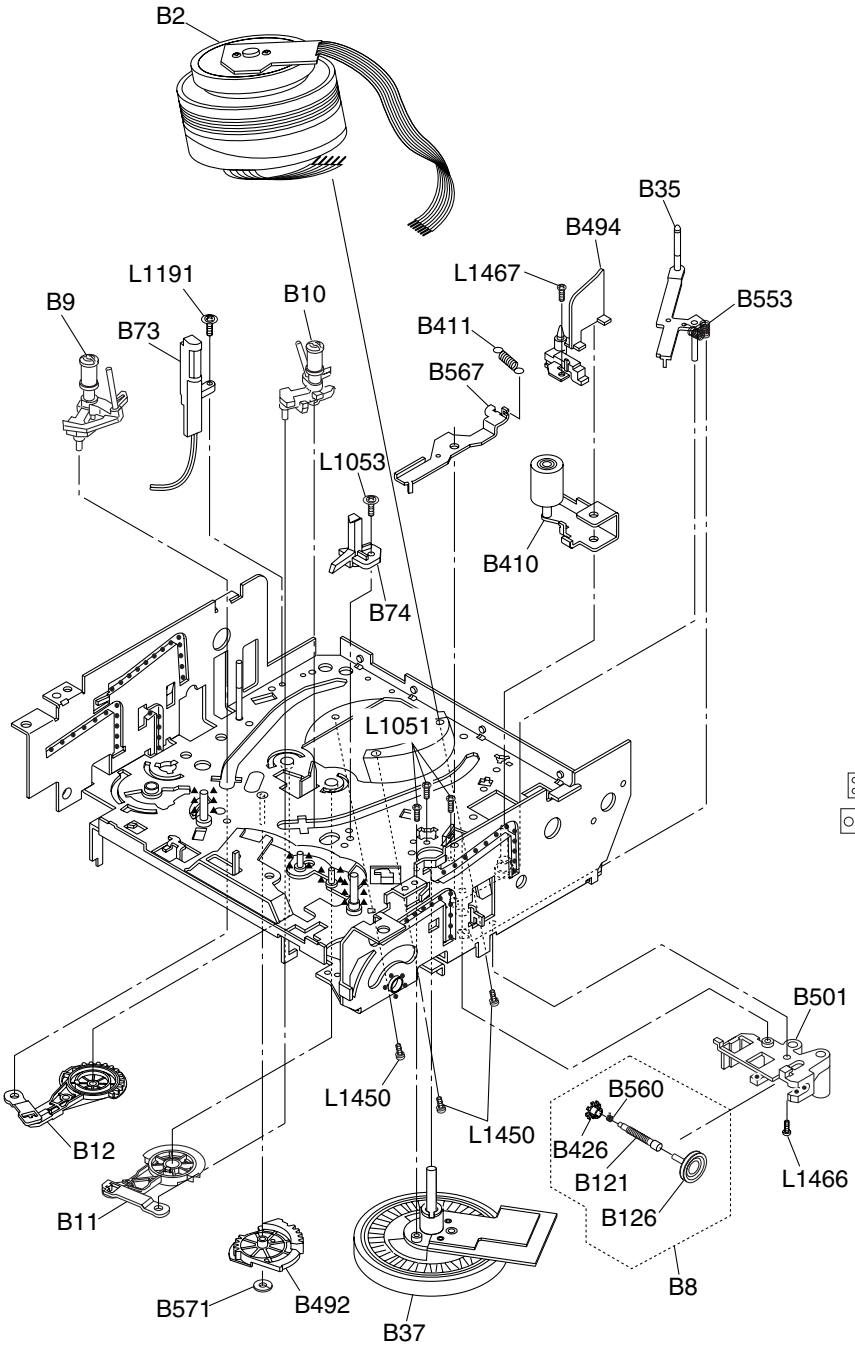


Fig. AL3

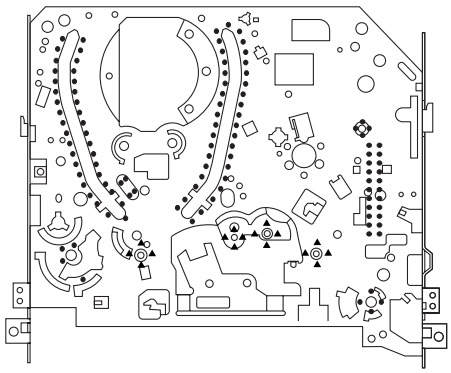
DECK EXPLODED VIEWS

Deck Mechanism View 1

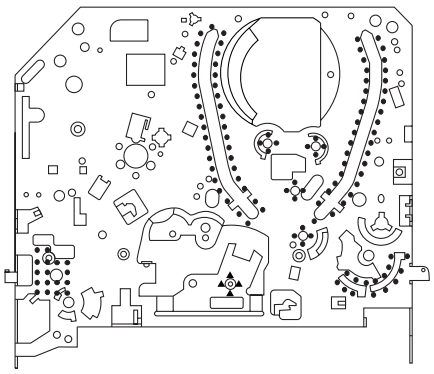
Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

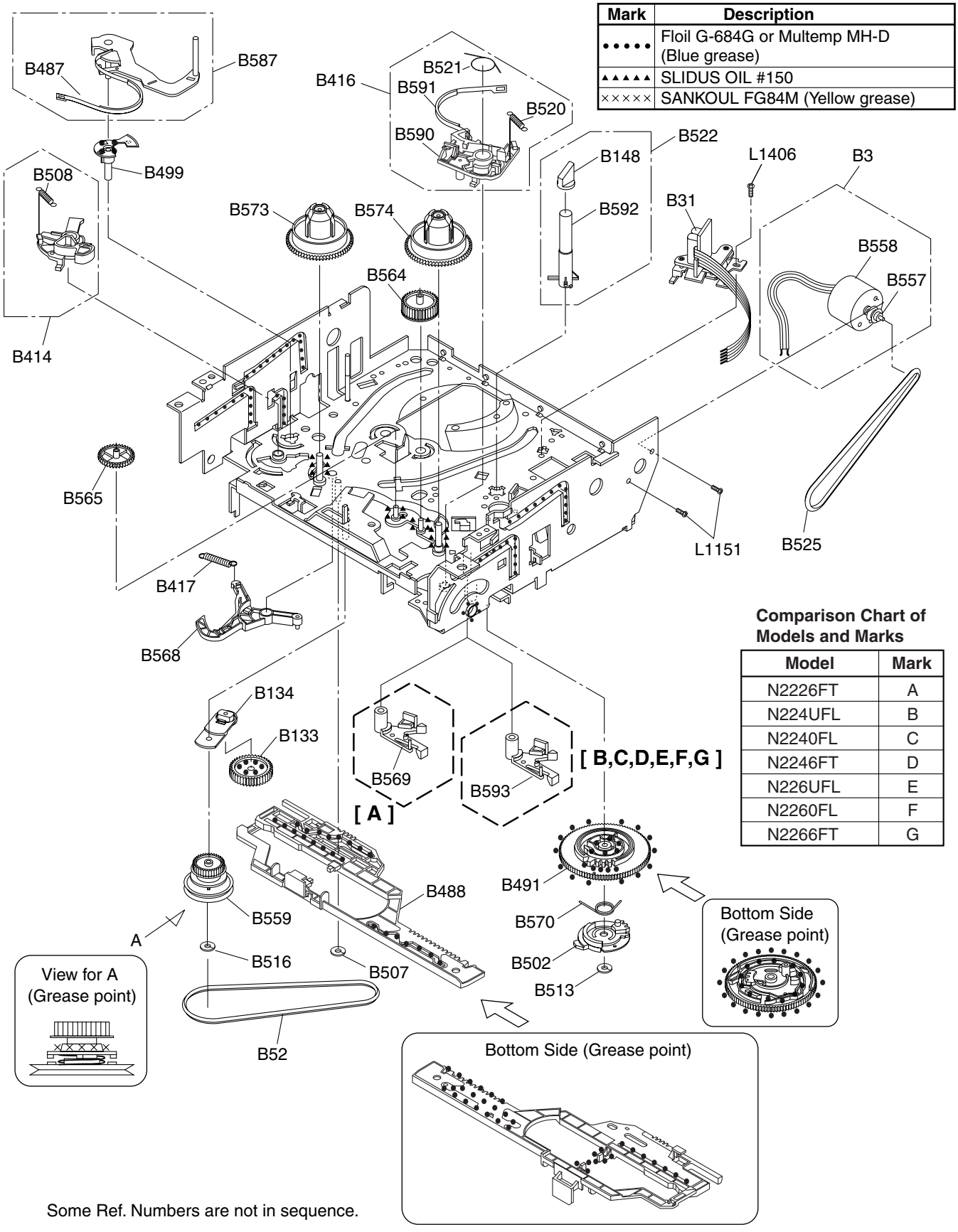


Chassis Assembly
Top View (Lubricating Point)



Chassis Assembly
Bottom View (Lubricating Point)

Deck Mechanism View 2



Mark	Description
•••••	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150
×××××	SANKOUL FG84M (Yellow grease)

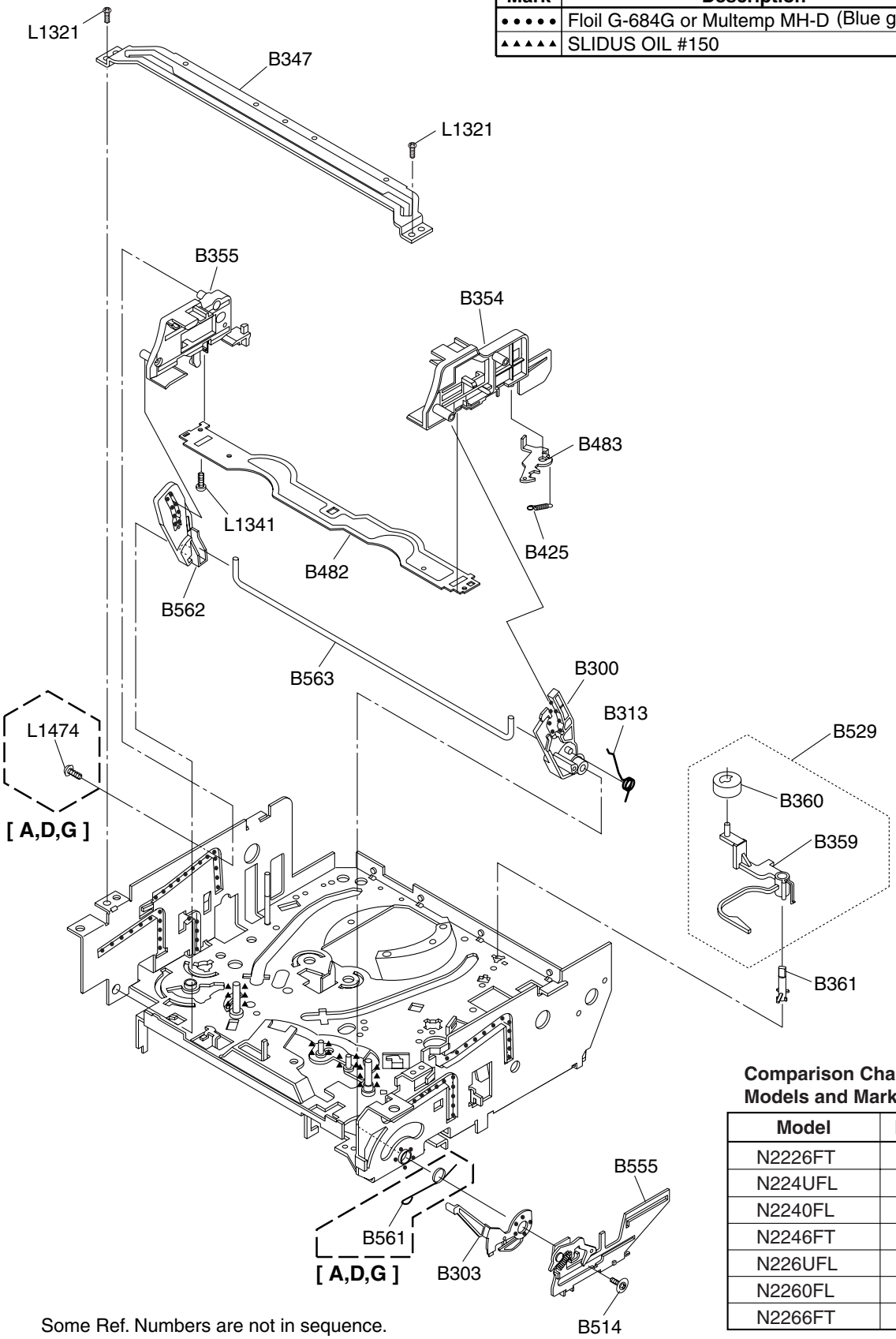
Comparison Chart of Models and Marks

Model	Mark
N2226FT	A
N224UFL	B
N2240FL	C
N2246FT	D
N226UFL	E
N2260FL	F
N2266FT	G

Some Ref. Numbers are not in sequence.

Deck Mechanism View 3

Mark	Description
●●●●●	Floil G-684G or Multemp MH-D (Blue grease)
▲▲▲▲▲	SLIDUS OIL #150



Some Ref. Numbers are not in sequence.

Comparison Chart of Models and Marks

Model	Mark
N2226FT	A
N224UFL	B
N2240FL	C
N2246FT	D
N226UFL	E
N2260FL	F
N2266FT	G

DECK PARTS LIST

Comparison Chart of Models and Marks

Model	Mark
N2226FT	A
N224UFL	B
N2240FL	C
N2246FT	D
N226UFL	E
N2260FL	F
N2266FT	G

Ref. No.	Mark	Description	Part No.
B2	A	CYLINDER ASSEMBLY MK12.5 NTSC 2HD	N2228CYL
B2	B,C,D	CYLINDER ASSEMBLY MK12.5 NTSC 4HD	N2248CYL
B2	E,F,G	CYLINDER ASSEMBLY MK12.5 NTSC 6HD	N2268CYL
B3		LOADING MOTOR ASSEMBLY MK12.5	0VSA14636
B8		PULLEY ASSEMBLY MK12	0VSA13500
B9		MOVING GUIDE S P.P MK12.5	0VSA14717
B10		MOVING GUIDE T P.P MK12.5	0VSA14639
B11		LOADING ARM(TU) ASSEMBLY MK12	0VSA13300
B12		LOADING ARM(SP) ASSEMBLY MK12	0VSA13299
B31	A,D,G	AC HEAD ASSEMBLY(TVCR) MK12.5	0VSA14866
B31	B,C,E,F	AC HEAD ASSEMBLY MK12.5	0VSA14841
B35		TAPE GUIDE ARM ASSEMBLY MK12.5	0VSA15014
B37	A,C,D,F, G	CAPSTAN MOTOR 288/VCZC1300	N9680CML
B37	B,E	CAPSTAN MOTOR 288/VCZC1302	N9682CML
B52		CAP BELT MK10	0VM411138
B73		FE HEAD(MK11) MH-131SF11 or	DHVEC01Z0005
		FE HEAD(MK12) VTR-1X2ERS11-155 or	DHVEC01TE005
		FE HEAD(MK12) HVFHP0047A	DHVEC01AL007
B74		PRISM MK10	0VM202870
B121		WORM MK12	0VM414091
B126		PULLEY MK12	0VM414330B
B133		IDLER GEAR MK12	0VM305738
B134		IDLER ARM MK12	0VM305739
B148		TG CAP MK11	0VM412972
B300		C DRIVE LEVER(TU) MK12	0VM203773
B303		F DOOR OPENER MK12	0VM203751C
B313		C DRIVE SPRING MK12	0VM414145
B347		GUIDE HOLDER A MK10	0VM304920
B354		SLIDER(TU) MK12	0VM101172F
B355	A,D,G	SLIDER(SP) MK12	0VM101182K
B355	B,C,E,F	SLIDER(SP) MK12	0VM101182H
B359		CLEANER LEVER MK10	0VM304413
B360		CLEANER ROLLER MK9	0VM410032C
B361		CL POST MK10	0VM411114
B410		PINCH ARM(A) ASSEMBLY(6) MK12.5 or	0VSA14935
		PINCH ARM(A) ASSEMBLY(5) MK12	0VSA13788
B411		PINCH SPRING MK12	0VM414644
B414		M BRAKE(SP) ASSEMBLY MK12.5	0VSA14994
B416		M BRAKE(TU) ASSEMBLY MK12	0VSA13283
B417		TENSION SPG(3002645) MK12	0VM414221F
B425		LOCK LEVER SPRING MK10	0VM411110
B426		KICK PULLEY MK10	0VM411095
B482		CASSETTE PLATE MK12	0VM203749
B483		LOCK LEVER MK12	0VM414095
B487		BAND BRAKE(SP) MK12	0VM305723
B488		MODE LEVER MK12.5	0VM101351
B491		CAM GEAR(A) MK12	0VM101174
B492		MODE GEAR MK12	0VM203769
B494		C DOOR OPENER MK12	0VM305719
B499		T LEVER HOLDER MK12	0VM305729
B501		WORM HOLDER MK12	0VM203767
B501	B,C,E,F	WORM HOLDER(R) MK12	0VM204324
B502		CAM GEAR(B) MK12	0VM305721
B507		REEL WASHER MK9 5*2.1*0.5	0VM410058
B508		S BRAKE SPRING MK10	0VM411121
B513		CAM WASHER MK12	0VM414741
B514		SCREW RACK MK10	0VM411535
B516		REEL WASHER MK9 5*2.1*0.5	0VM410058
B520		TU BRAKE SPRING MK12	0VM414285
B521		REV BRAKE SPRING MK12	0VM414222
B522		TG POST ASSEMBLY MK11	0VSA12080
B525		LDG BELT MK11	0VM412804
B529		CLEANER ASSEMBLY MK10	0VSA11161
B553		REV SPRING MK11	0VM412555
B555		RACK ASSEMBLY MK12	0VSA13289
B557		MOTER PULLEY U5	0VM403205
B558		LOADING MOTOR M31E-1 R-14 7401	MMDZB12MM007
B559		CLUTCH ASSEMBLY MK12 or	0VSA13284
		CLUTCH ASSEMBLY(64) MK12	0VSA14459
B560		KICK SPRING MK10	0VM411475A
B561	A,D,G	F DOOR SPRING MK10	0VM411430
B562		C DRIVE LEVER(SP) MK12	0VM203772
B563		SLIDER SHAFT MK12	0VM305762
B564		M GEAR MK12	0VM305735
B565		SENSOR GEAR MK12	0VM305736
B567		PINCH ARM(B) MK12	0VM305718
B568		BT ARM MK12	0VM305728
B569	A	CAM HOLDER(F) MK12 or	0VM305722
	A	CAM HOLDER MK12.5	0VM306618
B570		CAM RACK SPRING(HI) MK11	0VM412923
B571		P.S.W CUT 1.6X4.0X0.5T	0VM408485A
B573		REEL(SP)(D2) MK12	0VM203755
B574		REEL(TU)(D2) MK12	0VM203756
B587		TENSION LEVER ASSEMBLY MK12	0VSA13279
B590		BRAKE ARM(TU) MK12	0VM203752E
B591		BAND BRAKE(TU) MK12	0VM305724C
B592		TG POST MK11	0VM412550
B593	B,C,D,E ,F,G	CAM HOLDER ASSEMBLY MK12.5	0VSA14634
L1051		SCREW, B-TIGHT M2.6X6 PAN HEAD+	GPMB9060
L1053		SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1151		SCREW, SEMS M2.6X4 PAN HEAD+	CPM39040
L1191		SCREW, S-TIGHT M2.6X8 WASHER HEAD+	GCMS9080
L1321		SCREW, S-TIGHT M3X6 BIND HEAD+	GBMS3060
L1341		SCREW, P-TIGHT M2X6 PAN HEAD+	GPMP2060
L1406		AC HEAD SCREW MK9	0VM410964
L1450		SCREW, SEMS M2.6X5 PAN HEAD+	CPM39050
L1466		SCREW, S-TIGHT M2.6X6 BIND HEAD+	GBMS9060
L1467		SCREW M2.6X5 WASHER HEAD+	SCM39050
L1474	A,D,G	SCREW, P-TIGHT M2.6X12 WASHER HEAD+	GCMP9120